PHOTOFACT* FOLDER SET

*TRADE MARK

NO. 139

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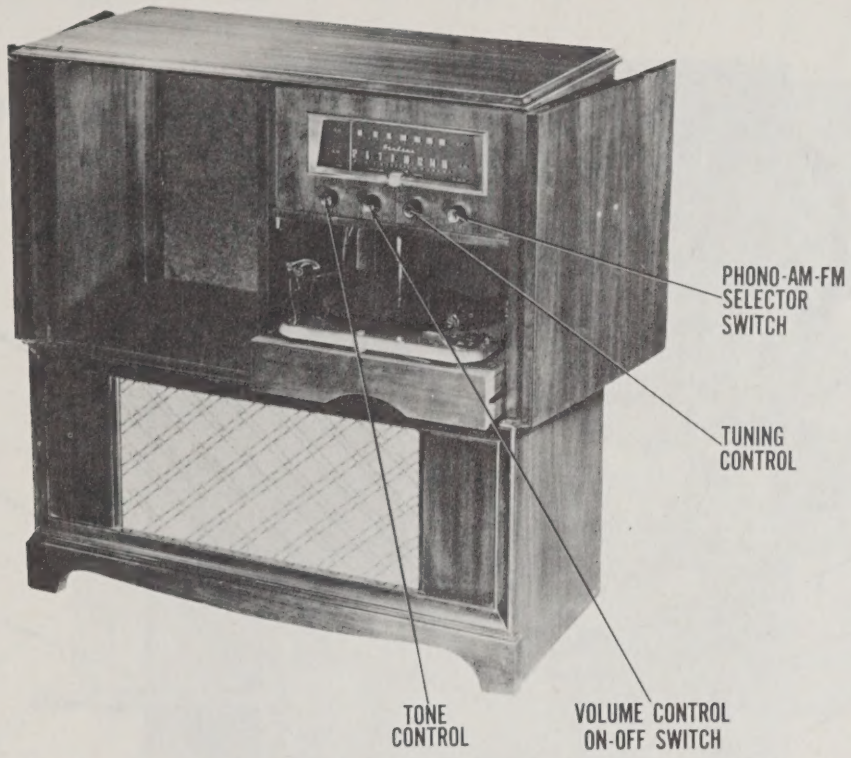
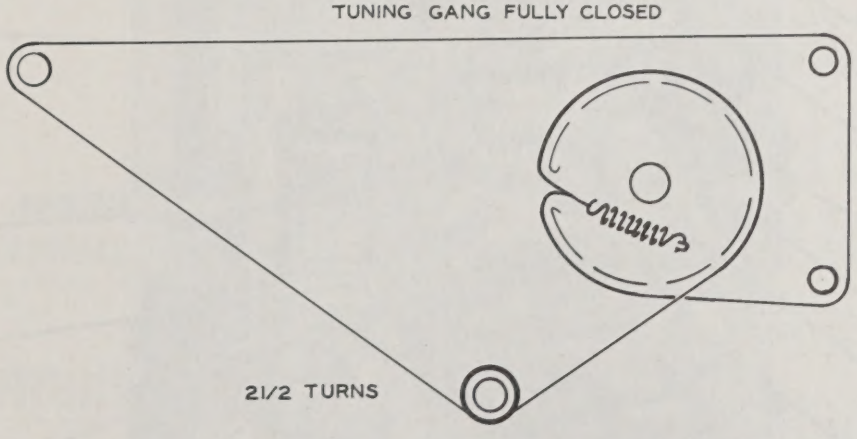
AIRLINE
MODEL 05WG-2748F



AIRLINE
MODEL 05WG-2748F

TRADE NAME	Airline, Model 05WG-2748F
SUPPLIER	Montgomery-Ward & Co., 619 Chicago Ave., Chicago, Illinois
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Ant.
TUBES (NINE)	Types 6AB4 FM RF Amp., 6AB4 FM Mixer, 6BE6 FM Osc.-AM Conv., 6BA6 1st. IF Amp. 6BA6 2nd. FM IF Amp., 6AL5 Ratio DET., 6AV6 DET.-AVC-AF, 6V6GT Power Output, 6X5GT Rectifier
POWER SUPPLY	110-120 Volts AC
	RATING .35 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC
	FREQ. MOD. 88-108MC

FOR SERVICE INFORMATION ON RECORD CHANGER SEE MISCELLANEOUS SERIES 700F 33/45 IN PHOTOFACT SET 75 FOLDER 11 OR RECORD CHANGER MANUAL CM-3.



DIAL CORD DRIVE

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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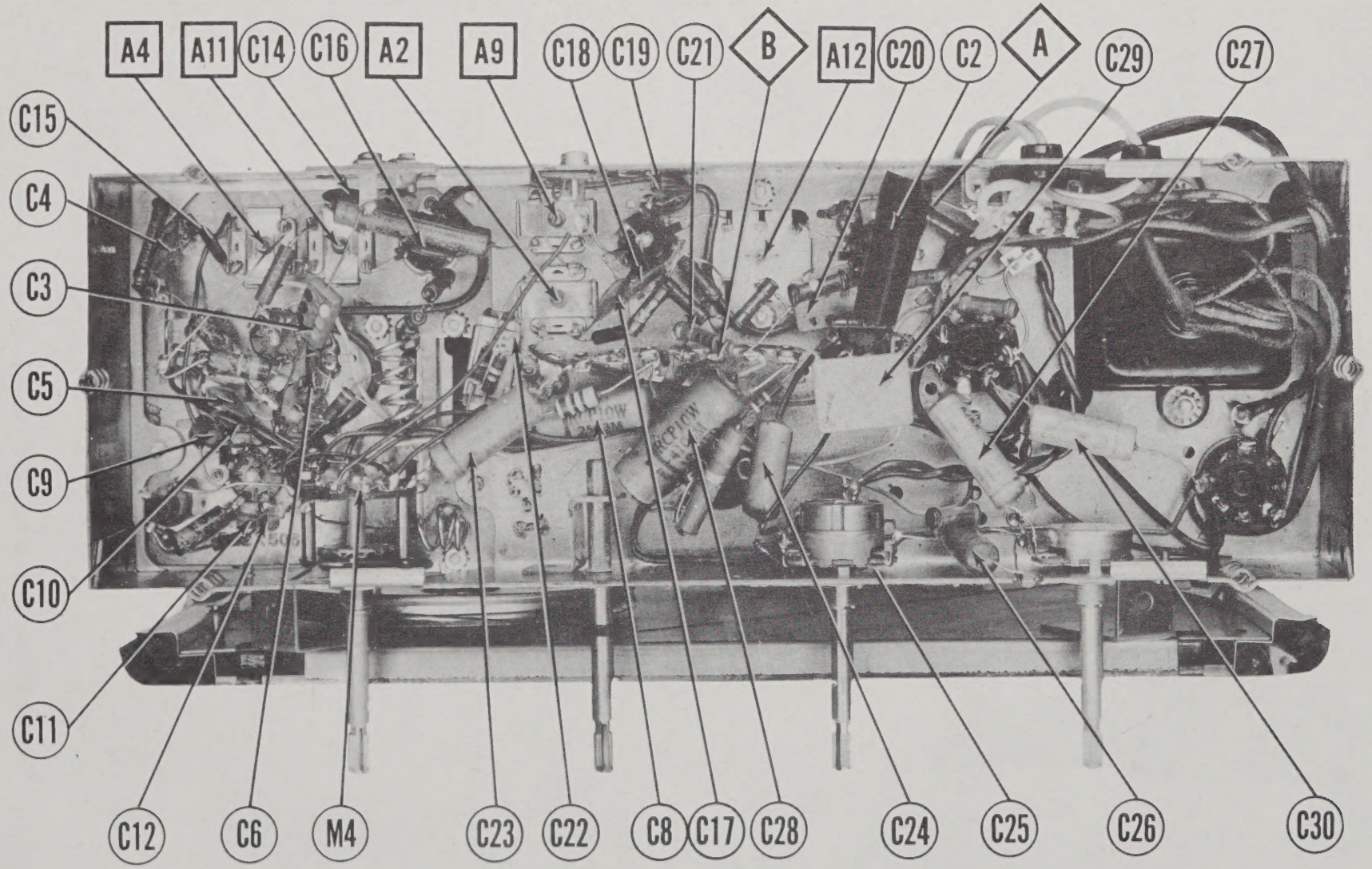
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C16
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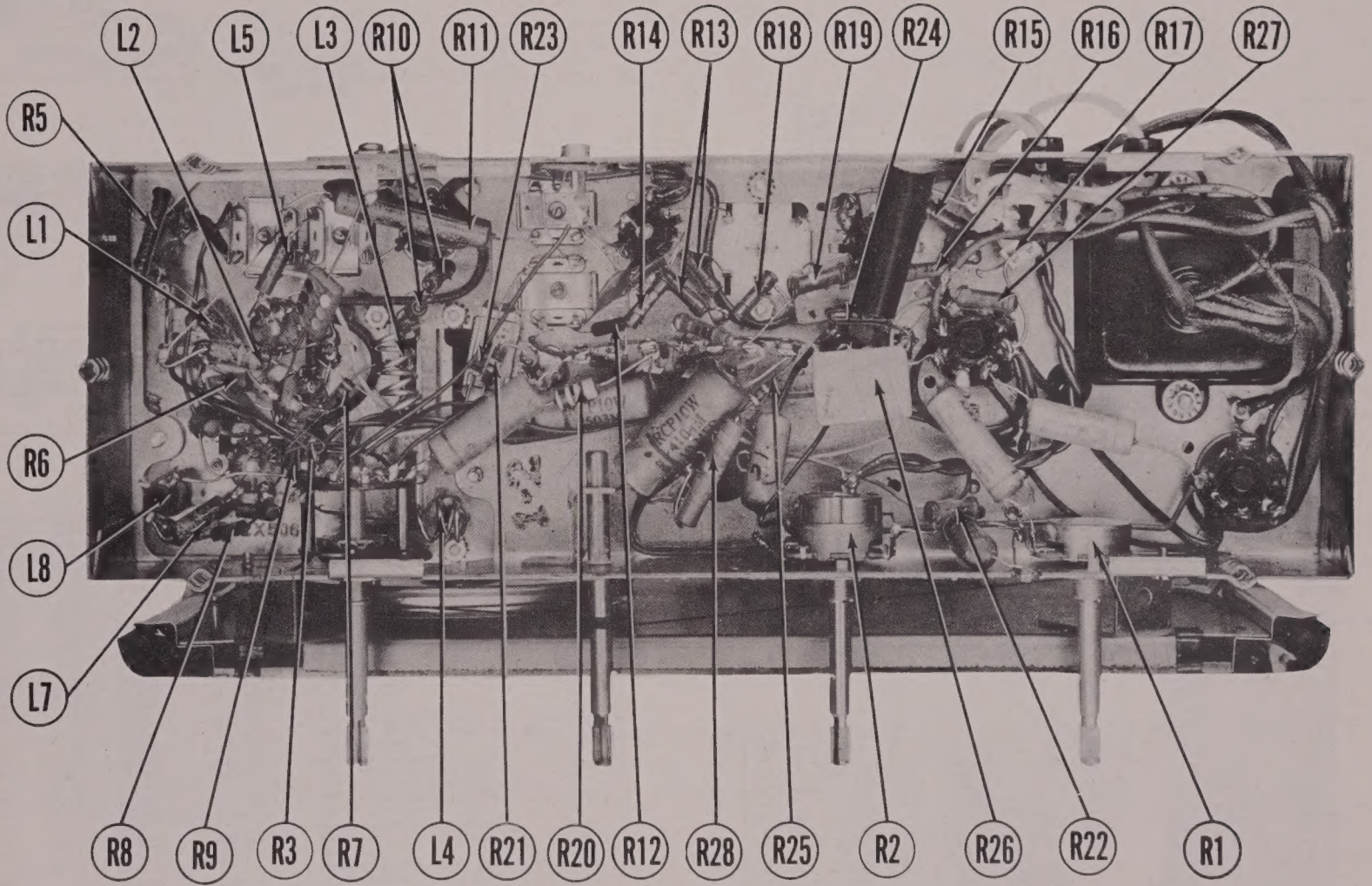
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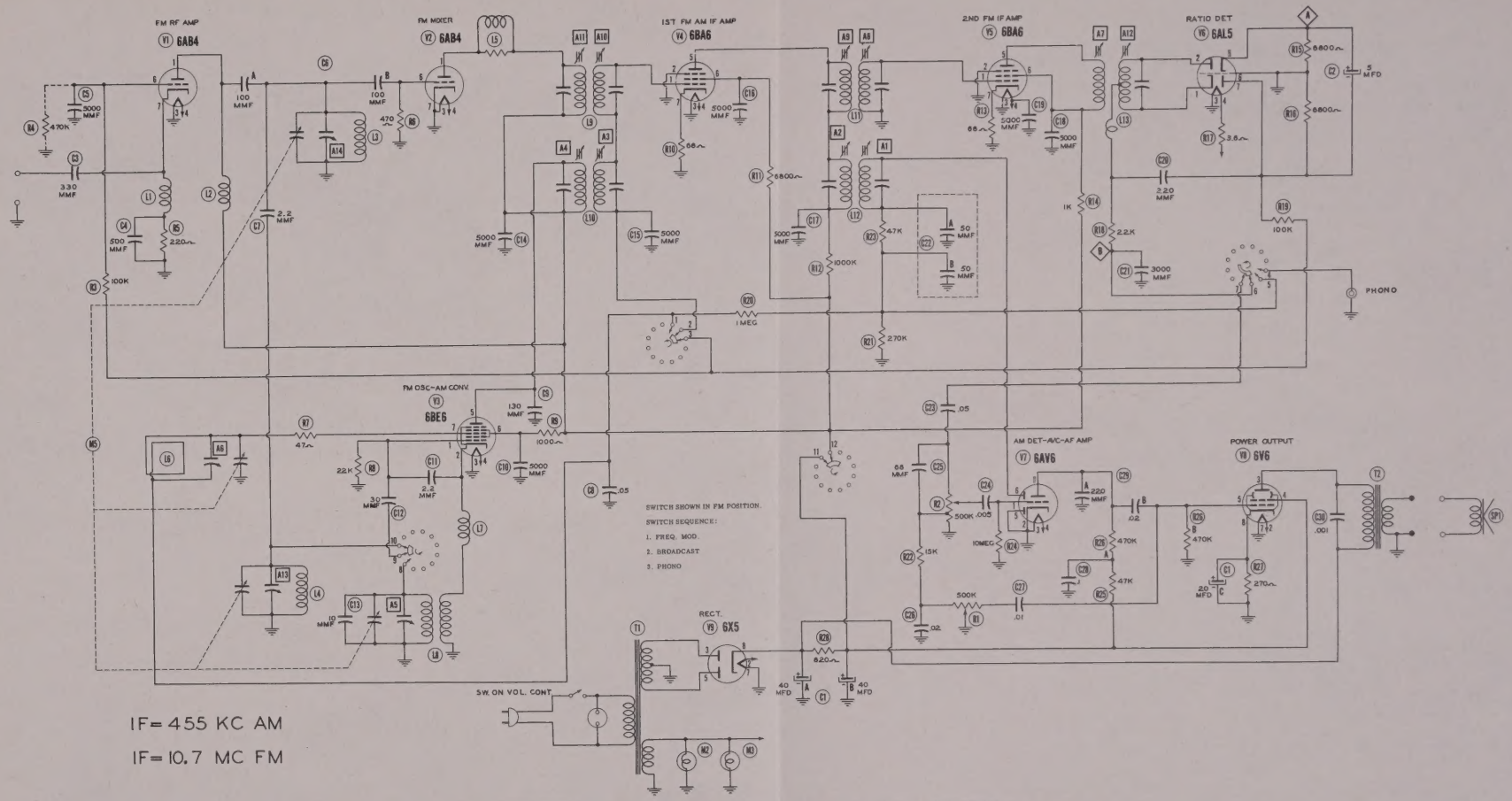

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6AB4	110VDC	0V	0V	6.3VAC	0V	-.2VDC	.8VDC	
V 2	6AB4	110VDC	0V	0V	6.3VAC	0V	8▲-2VDC	0V	
V 3	6BE6	8+-3.8VAC	0V	0V	6.3VAC	110VDC	105VDC	▲=-.4VDC +-.2VDC	
V 4	6BA6	.2VDC	0V	0V	6.3VAC	100VDC	90VDC	.7VDC	
V 5	6BA6	0V	0V	0V	6.3VAC	95VDC	85VDC	1VDC	
V 6	6AL5	0V	0V	0V	6.3VAC	.2VDC	0V	-.2VDC	
V 7	6AV6	-.5VDC	0V	0V	6.3VAC	0V	▲=5.2VDC *=3.6VDC	52VDC	
V 8	6V6GT	0V	6.3VAC	140VDC	115VDC	0V	0V	0V	5VDC
V 9	6X5GT	0V	0V	155VAC	0V	155VAC	0V	6.3VAC	106VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6AB4	†820Ω	0Ω	0Ω	.1Ω	Inf.	206KΩ	220Ω	
V 2	6AB4	†820Ω	0Ω	0Ω	.1Ω	Inf.	470KΩ	0Ω	
V 3	6BE6	22KΩ	2.3Ω	0Ω	.1Ω	†820Ω	†1.8KΩ	1.3Meg	
V 4	6BA6	▲.106KΩ *1.3Meg	0Ω	0Ω	.1Ω	†1.8KΩ	†7.8KΩ	68Ω	
V 5	6BA6	.9Ω	0Ω	0Ω	.1Ω	†1.8KΩ	†1.8KΩ	68Ω	
V 6	6AL5	Inf.	Inf.	0Ω	2Ω	6.8KΩ	0Ω	6.8KΩ	
V 7	6AV6	10Meg	0Ω	0Ω	.1Ω	0Ω	317KΩ	†317KΩ	
V 8	6V6GT	Inf.	.1Ω	†440Ω	†820Ω	470KΩ	.5Ω	0Ω	270Ω
V 9	6X5GT	Inf.	0Ω	115Ω	Inf.	115Ω	Inf.	.1Ω	50KΩ

ALL MEASUREMENTS TAKEN IN AM AND FM SWITCH POSITION
* MEASURED IN FM SWITCH POSITION
* MEASURED IN AM SWITCH POSITION
† MEASURED FROM PIN 8 OF V9

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning gang fully closed and set pointer to the index marks at the low frequency end of the dial.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD.	High side to pin 7 (Grid) of 6BE6, (V3) Low side to chassis.	455KC (400% Mod.)	AM (center)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	"	"	1620KC	"	"	"	A5	"
3.		Loop	1400KC	"	Tune for max. output.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	2500MMF.	High side to pin 1 (Grid) of 6BA6 (V4). Low side to chassis.	10.7MC (unmod.)	FM (CW)	Tuning gang fully closed.	DC probe to point Ⓐ. Common to chassis.	A7, A8, A9	Adjust for maximum deflection.
5.	"	High side to pin 6, (Grid) of 6AB4, (V2). Low side to chassis.	"	"	"	"	A10, A11	"
6.	"	"	"	"	"	DC probe to Point Ⓑ. Common to chassis.	A12	Adjust for zero reading A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
4.	2500MMF.	High side to pin 1 (Grid) of 6BA6, (V4) Low side to chassis.	10.7MC (450KC SWP)	FM (CW)	Point of non-interference	Vert. Amp. to Point Ⓐ. Common to chassis.	A7, A8, A9	Disconnect stabilizor capacitor C2. Adjust for maximum amplitude and symmetry as per fig. 1
5.	"	High side to pin 6 (Grid) of 6AB4, (V2) Low side to chassis.	"	"	"	"	A10, A11	"
6.	"	"	"	"	"	"	A12	Reconnect capacitor C2. Adjust A12 so 10.7MC occurs at center of crossover lines as per fig. 2. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	300Ω carbon resistor	High side thru 300Ω to ungrounded "FM" ant. terminal. Low side to chassis.	108.5MC (unmod.)	FM	Tuning gang fully closed.	DC probe to Point Ⓐ. Common to chassis.	A13	Adjust for maximum deflection.
8.	"	"	104.5MC	"	Tune for max. deflection	"	A14	"

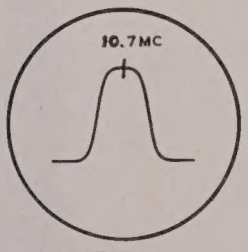


FIG. 1

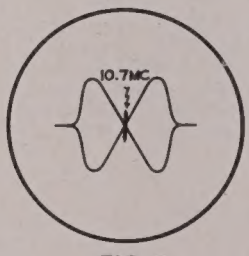


FIG. 2

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AIRLINE PART No.	IRC PART No.	
R3	100KΩ	½	B85104	BTS-100K	AVC Network
R4	470KΩ	½	B85474	BTS-470K	FM RF Amp. Grid - See Note 1
R5	220Ω	½	B84221	BTS-220	FM RF Amp. Cathode
R6	470KΩ	½	B85474	BTS-470K	FM Mixer Grid
R7	47Ω	½	B85470		Parasitic Suppressor
R8	22KΩ	½	B85223	BTS-22K	Osc. Grid
R9	1000Ω	½	B85102	BTS-1000	Osc. Anode
R10	68Ω	½	B84680		1st. IF Amp. Cathode - See Note 3
R11	6800Ω	2	B84682	BTB-6800	1st. IF Amp. Screen
R12	1000Ω	½	B85102	BTS-1000	1st. IF Amp. Plate Decoupling
R13	68Ω	½	B84680		2nd. FM IF Amp. Cathode - See Note 3
R14	1000Ω	½	B85102	BTS-1000	2nd. FM IF Amp. Decoupling
R15	6800Ω	½	B84682	BTS-6800	Ratio Det. Diode Load
R16	6800Ω	½	B84682	BTS-6800	Ratio Det. Diode Load
R17	3.6Ω	½	43X233	BW-½-3.6	Ratio Det. Diode Filament - Wire Wound
R18	22KΩ	½	B85223	BTS-22K	De-emphasis - See Note 2
R19	100KΩ	½	B85104	BTS-100K	AVC Network
R20	1Meg	½	B85105	BTS-1Meg	AVC Network
R21	270KΩ	½	B84274	BTS-270K	AVC Network
R22	15KΩ	½	B85153	BTS-15K	Tone Compensation
R23	47KΩ	½	B85473	BTS-47K	Diode Filter
R24	10Meg	½	B85106	BTS-10Meg	AF Amp. Gird
R25	47KΩ	½	B85473	BTS-47K	AF Amp. Plate Decoupling
R26A	470KΩ	♦	♦	BTS-470K	AF Amp. Plate
B	470KΩ			BTS-470K	Output Grid
R27	270Ω	½	B84271	BTS-270	Output Cathode
R28	820Ω	2	D84821	BTB-820	Filter

♦ Items R26A, R26B, C29A, and C29B are combined into one unit.

Note 1 Not used in all models.

Note 2 Some models use 27KΩ resistor in this application.

Note 3 Some models use series resistors in this application to obtain desired value.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ② .35A	300VCT .067ADC	6.3VAC ② 3A		53X291	PM8419 ①	P-3051 ①	PH-70 ②

① Add series resistor to reduce plate voltage.

② Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	5.6KΩ	3.2Ω	440Ω	.85Ω	51X134	A-3877 ③	A-2930 ③	R0-9 ③	③ Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	V. C. IMP.	AIRLINE PART No.	VIKING PART No.	QUAM PART No.	
SP1	PM	3.2Ω	12A480	10J12	10A4A	
	CONE DIA.	V.C. DIA.				
SP2	9 3/8"	1"				

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	AIRLINE PART No.	MEISSNER PART No.	IRC PART No.	
L1	RF Choke	.22Ω		35A9		CLA	.47 Microhenry
L2	RF Choke	3Ω		35A8		CLA	3.3 Microhenries
L3	FM RF Coil	0Ω		9A2066			
L4	FM Osc. Coil	0Ω		9A2067			
L5	Parasitic Supp.	0Ω		9A2105			
L6	Loop Ant.	1.4Ω	.1	9A2146			
L7	RF Choke	1.8Ω		35A5		CLA	2.2 Microhenries
L8	AM Osc. Coil	.5Ω	5.2Ω	9A2065			
L9	1st. FM IF	.9Ω	.9Ω	9A2060			
L10	1st. AM IF	13Ω	15Ω	9A2062			
L11	2nd. FM IF	.9Ω	.9Ω	9A2061			
L12	2nd. AM IF	13Ω	14.8Ω	9A2063			
L13	Disc. Trans.	1.2Ω	.1Ω	9A2161			Tap .3Ω

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA							REMARKS
	AIRLINE PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		LT-3D	"D" D-33					

ASTATIC NEEDLE LISTING SHOWN ABOVE IS SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED.

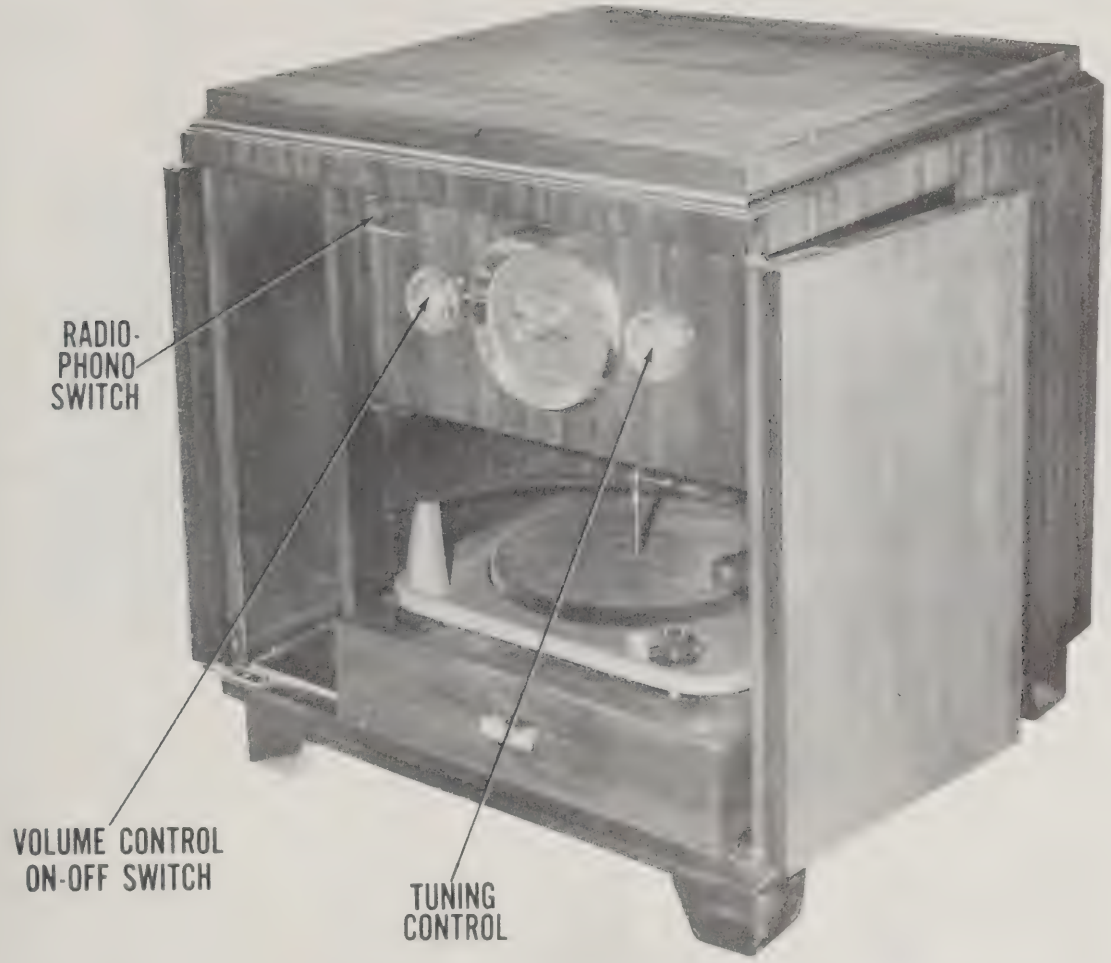
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					AIRLINE PART No.		
M2	Bayonet	6-8	.15	Brown	7A103		Type #47
M3	Bayonet	6-8	.15	Brown	7A103		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M4	Switch	2A393	AM-FM-Phono
M5	2 Gang Var. Cap.	14A209	(19-522MMF, 38-220MMF)
A6	Trimmer	17A235	Ant. Adj.
	Knob	10A759	
	Dial Glass	58X741	
	Dial Pointer	15X251	

CROSLEY
MODELS 11-550MU, 11-560BU (Ch. 337)



CROSLEY
MODELS 11-550MU, 11-560BU (Ch. 337)

CROSLEY MODEL 11-550MU

TRADE NAME	Crosley, Models 11-550MU, 11-560BU (Ch. 337)
MANUFACTURER	Crosley Corp., 1329 Arlington St., Cincinnati, Ohio
TYPE SET	AC Operated Combination Phono-Radio, Superheterodyne Receiver with Loop Ant.
TUBES (FIVE)	Types 12BE6 Converter, 12BA6 IF Amp., 12SQ7 DET.-AVC-AF, 50C5 Power Output, 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC — RATING .23 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap fully closed and set pointer to last reference mark at low frequency end of dial. Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	200MMF.	High side to ext. antenna screw. Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	"	"	1620KC	"	"	A5	"
3.	"	"	1400KC	Tune for max. output.	"	A6	"

FOR SERVICE INFORMATION ON RECORD CHANGER SEE V-M MODEL 950 IN PHOTOFACT SET 107 FOLDER 13 OR RECORD CHANGER MANUAL CM-3

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PARTS LIST AND DESCRIPTIONS

CROSLEY
MODEL 11-550MU

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		CROSLEY PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	DET.-AVC-AF	12SQ7	12SQ7	8Q	
V4	Power Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	CROSLEY PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	100	150	B-147174	PRS150/80-40-20		EDL845		TVA-3455	Filter
B	30	150				BR1015		TVA-1406	Filter
C	10	150							Decoupling
C2	39		C-137727-109		TCZ-39		NP0L-390		Osc. Grid Cap.
C3	.1	200	39001-19	P288-1	DF-104	PTE4P1		2TM-P1	AVC Filter
C4A	.0002		C-144675-1 ♦	SI200	D6-201	5W5T2	GP2K-201	34C3 ♦	AVC Filter
B	.002			SI2000	D6-202	PTE6D2	GP2-333-202		Audio Coupling
C	.005			SI5000	D6-502	PTE6D5	GP2-333-502		Audio Coupling
D	.0002			SI200	D6-201	5W5T2	GP2K-201		AF Amp. Plate
C5	.0005	600	39001-5	SI500	D6-501	5W5T5	GP2K-501	19C32	Audio Coupling
C6	100		B-143686-3	SI100	D6-101	5W5T1	GP1K-101	19C11	Tone Comp.
C7	.005	600	39001-11	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Tone Comp.
C8	.01	400	39001-13	P488-01	D6-103	PTE4S1		4TM-S1	Output Plate
C9	.002	600	39001-74	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Hum Balancing Cap.
C10	.08	200	39001-85	P288-1	DF-104	PTE4P1		2TM-P1	Isolation
C11	.05	400	39001-17	P488-05	DF-503	PTE4S5		4TM-S5	Rectifier Plate
C12	.08	200	39001-85	P288-1	DF-104	PTE4P1		2TM-P1	Isolation

♦ Items C4A, C4B, C4C, C4D are combined in one unit.

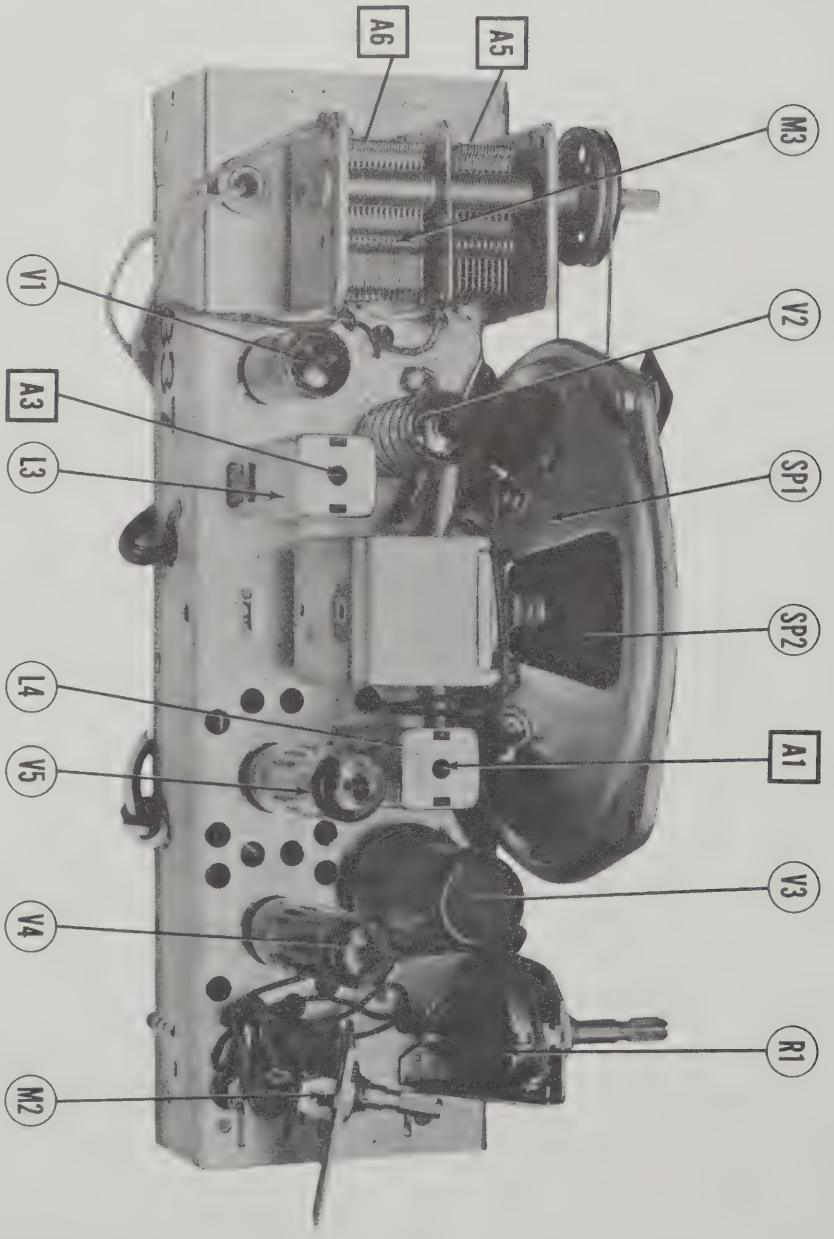
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	CROSLEY PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1	3Meg	½	B-150044				Volume control and SW - Tapped ⓐ 300KΩ

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CROSLEY PART No.	IRC PART No.	
R2	22KΩ	½	39373-60	BTS-22K	Osc. Grid
R3	2.2Meg	½	39373-97	BTS-2.2Meg	AVC Network
R4	100KΩ	½	39373-74	BTS-100K	AVC Network
R5	680KΩ	½	39373-90	BTS-680K	Tone Compensation
R6	47KΩ	½	39373-67	BTS-47K	Tone Compensation
R7	5600Ω	½	39374-34	BTS-5600	Hum Balancing
R8	10Meg	½	39373-107	BTS-10Meg	AF Amp. Grid
R9	470KΩ	½	39373-87	BTS-470K	AF Amp. Plate
R10	470KΩ	½	39373-87	BTS-470K	Output Grid
R11	150Ω	½	39373-16	BW-½-150	Output Cathode - Wire Wound
R12	1000Ω	½	39373-33	BTS-1000	Filter
R13	1200Ω	1	39374-114	BTA-1200	Filter
R14	100Ω	2	39374-189		Surge Limiter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CROSLEY PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	3KΩ	4.1Ω	350Ω	.6Ω	B-147171	A-387 ①	A-3025 ①	R0-2	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			CROSLEY PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V. C. IMP.	AD-145956-2	525J4 ②	52A1 ②	② Drill and tap magnet frame.
	PM	4.1Ω				
SP2	CONE DIA.	V. C. DIA.				
	5"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	CROSLEY PART No.	MEISSNER PART No.	
L1	Loop Ant.	2.5Ω	.1Ω	C-147961		
L2	Osc. Coil	.9Ω	9.8Ω	AW-148259		
L3	1st. IF Coil	16.5Ω	16Ω	AC-139919-3		
L4	2nd. IF Coil	16.5Ω	16Ω	AC-139919-3		

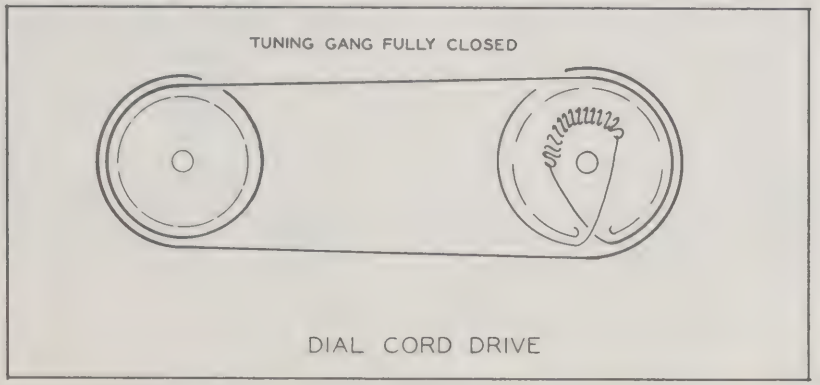
PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA							REMARKS
	CROSLEY PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		AC-AG-J	A-AG	W36B	A56U	33-2	0-2 or S-2	

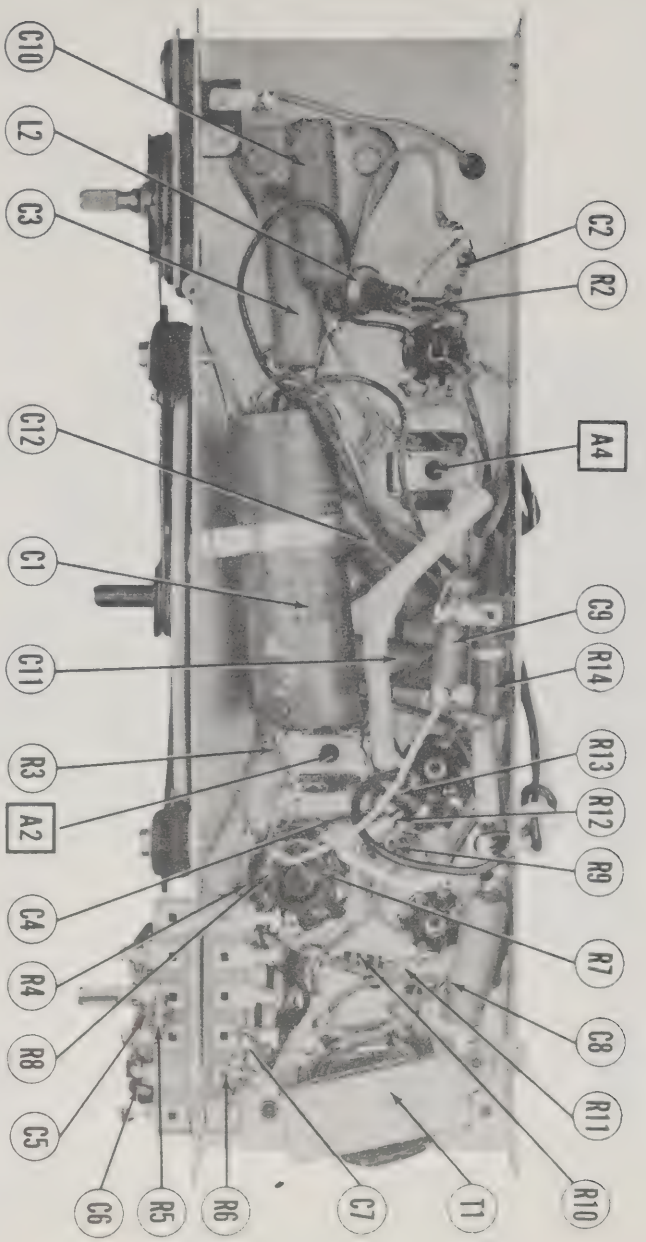
ASTATIC, SHURE, AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

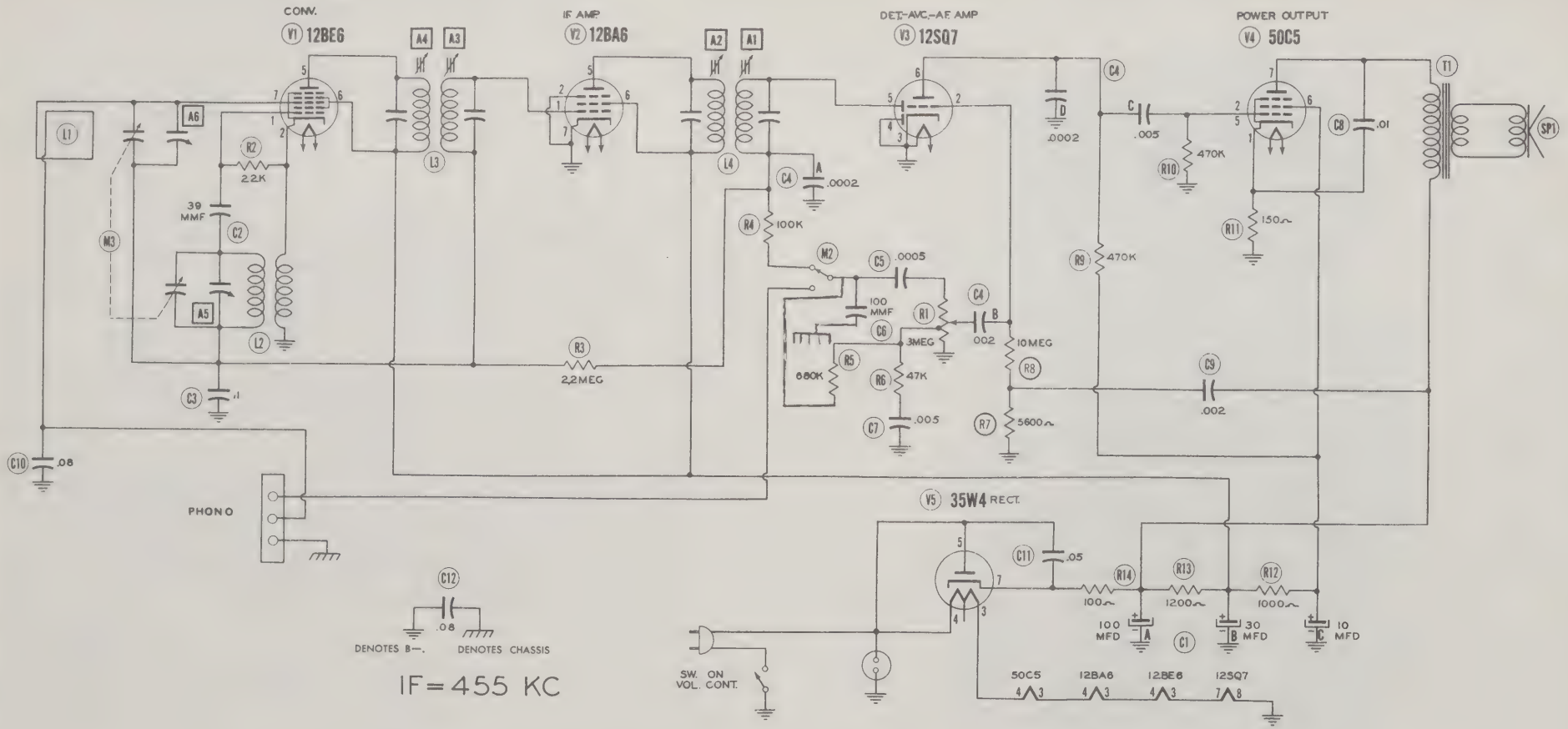
MISCELLANEOUS

ITEM No.	PART NAME	CROSLEY PART No.	NOTES
M2	Switch	B-150042	Radio - Phono
M3	2 Gang Var. Cap.	B-150043	(31-472MMF, 22-157MMF)
	Cabinet	R-150070	Model 11-550MU
	Cabinet	R-150268	Model 11-560BU
	Dial Pointer	W-147181	



CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BE6	§-6.6VDC	0V	12VAC	23VAC	85VDC	85VDC	-.5VDC	
V 2	12BA6	-.5VDC	0V	23VAC	36VAC	85VDC	85VDC	0V	
V 3	12SQ7	0V	.3VDC	0V	0V	-1.3VDC	47VDC	12VAC	0V
V 4	50C5	5.1VDC	0V	36VAC	77VAC	0V	80VDC	100VDC	
V 5	35W4	110VDC	0V	77VAC	117VAC	117VAC	105VAC	115VDC	

§ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BE6	22KΩ	.8Ω	14Ω	33Ω	†1.3KΩ	†1.3KΩ	3Meg	
V 2	12BA6	3Meg	0Ω	25Ω	38Ω	†1.3KΩ	†1.3KΩ	0Ω	
V 3	12SQ7	Inf.	10Meg	0Ω	0Ω	1Meg	†470KΩ	14Ω	0Ω
V 4	50C5	160Ω	470KΩ	33Ω	90Ω	470KΩ	†2.3KΩ	†550Ω	
V 5	35W4	†100Ω	0Ω	90Ω	120Ω	120Ω	120Ω	40KΩ	

† MEASURED FROM PIN 7 OF V5

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A PHOTOFACT STANDARD NOTATION SCHEMATIC

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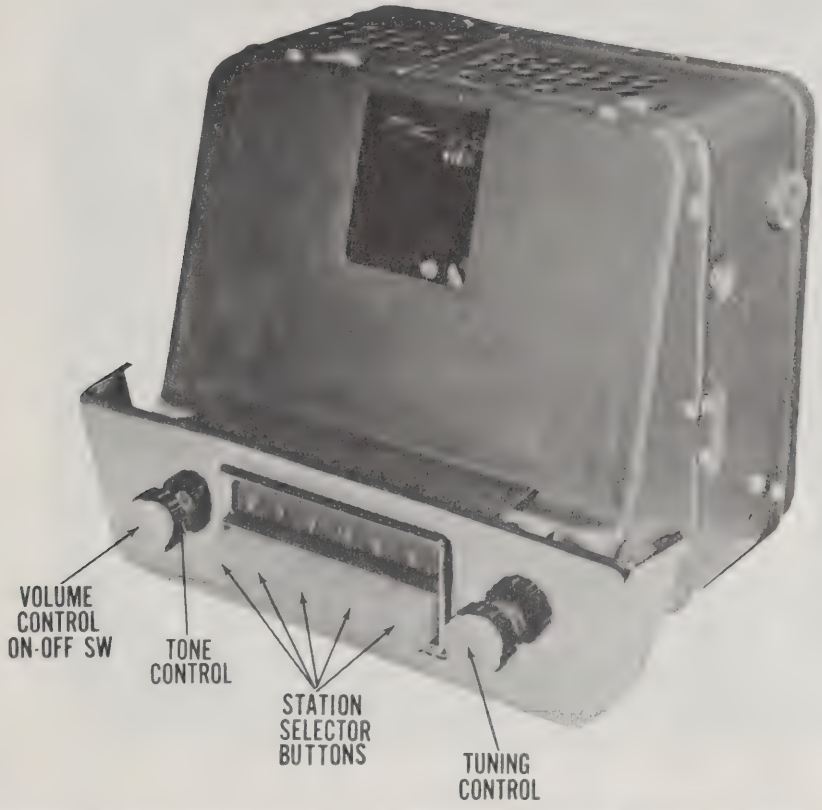
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

KAISER-FRAZER
MODEL 100205



KAISER-FRAZER
MODEL 100205

TRADE NAME	Kaiser-Frazer, Model 100205
SUPPLIER	Kaiser-Frazer Co., Willow Run, Michigan
TYPE SET	Battery Operated Automotive Superheterodyne Receiver for 1951 "Henry J" cars
TUBES (SIX)	Types 6SK7 RF Amp., 6SA7 Conv., 6SK7 IF Amp., 6SQ7 DET.-AVC-AF Amp., 6V6GT Power Output, 0Z4 Rectifier
POWER SUPPLY	6 Volt Storage Battery — RATING 6 Amp. @ 6.3 Volts DC
TUNING RANGE—BROADCAST	550-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than neeessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD.	High side to pin 8 (Grid) of 6SA7 (V2). Low side to chassis.	260KC (400∿ Mod.)	High freq. end cores fully out.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	68MMF.	High side to ant. connector. Low side to chassis.	1615KC	High freq. end. Check to see that the osc. core is 1-25/32 ins. from the mounting end of the coil. Insert a suitable plug into coil for this measurement.	"	A5, A6, A7	"
3.	"	"	1000KC	Tune for max. deflection.	"	A8, A9	"
4.	"	"	1615KC	High freq. end.	"	A6, A7	"
5.	"	"	1100KC	Tune for max. output.	"	Pointer adjust screw	Adjust so the pointer is centered between the ones of the 1100 calibration, when looking straight at dial.

After set is installed fully extend antenna and tune in a weak station near 1400KC. Readjust A7 for maximum volume.

PUSHBUTTON ADJUSTMENTS

Since the pushbuttons are mechanical any button may be set for any station within the receivers tuning range. Push the button all the way to the left and pull outward. Carefully tune in the desired station manually. Press the button all the way in. Repeat this procedure for each button.

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PARTS LIST AND DESCRIPTIONS

KAISER-FRAZER
MODEL 100205

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: KAISER-FRAZER PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amplifier	6SK7	6SK7	8N	
V2	Converter	6SA7	6SA7	8R	
V3	IF Amplifier	6SK7	6SK7	8N	
V4	Detector-AVC-AF Amplifier	6SQ7	6SQ7	8Q	
V5	Power Output	6V6GT	6V6GT	7AC	
V6	Rectifier	0Z4	0Z4	4R	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: KAISER-FRAZER PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	20	400	M908	AF4414A		UP2445C		TVL-2755	■ Filter
B	20	400						TVA-1205	▲ Filter
C	20	25							Output Cathode
C2	.05	400	E503	P488-05	DF-503	PTE4S5		4TM-S5	Decoupling
C3	68	500	G680	1469-00007	D6-680	5W5Q7	GP1K-680	MS-47	RF Coupling
C4	39	500	G390	1468-00004	D6-390	5W5Q4	GP1K-390	1FM-44	Fixed Trimmer
C5	180		7257424	SII80	D6-181		GP2K-181		Fixed Trimmer
C6	.05	200	E503	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C7	.002	600	E202	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Tone Comp.
C8	.005	600	E502	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Coupling
C9	.03	400	E303	P488-03		PTE6S3		6TM-S3	Audio Coupling
C10	.008	800	H802	P1088-0075		PTE16D8		MB-D8	Output Plate
C11	.006	1600	H602	P1688-006		PTE16D6		MB-D6	Buffer Cap.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Kaiser-Frazer PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	2 Meg	½		Concentrikit B13-139 ϕ			Tone Control - Front
B	300KΩ	½		B13-132 ϕ			Volume Control - Rear
C	Shaft end		7260651	E-187 ϕ			Attach per instructions in Concentrikit
D	Switch			76-1 ϕ			Attach per instructions in Concentrikit
E	Bushing			S5 ϕ			Attach to R1A
R2	1000Ω	1	7242204				Sensitivity Control - Wire Wound

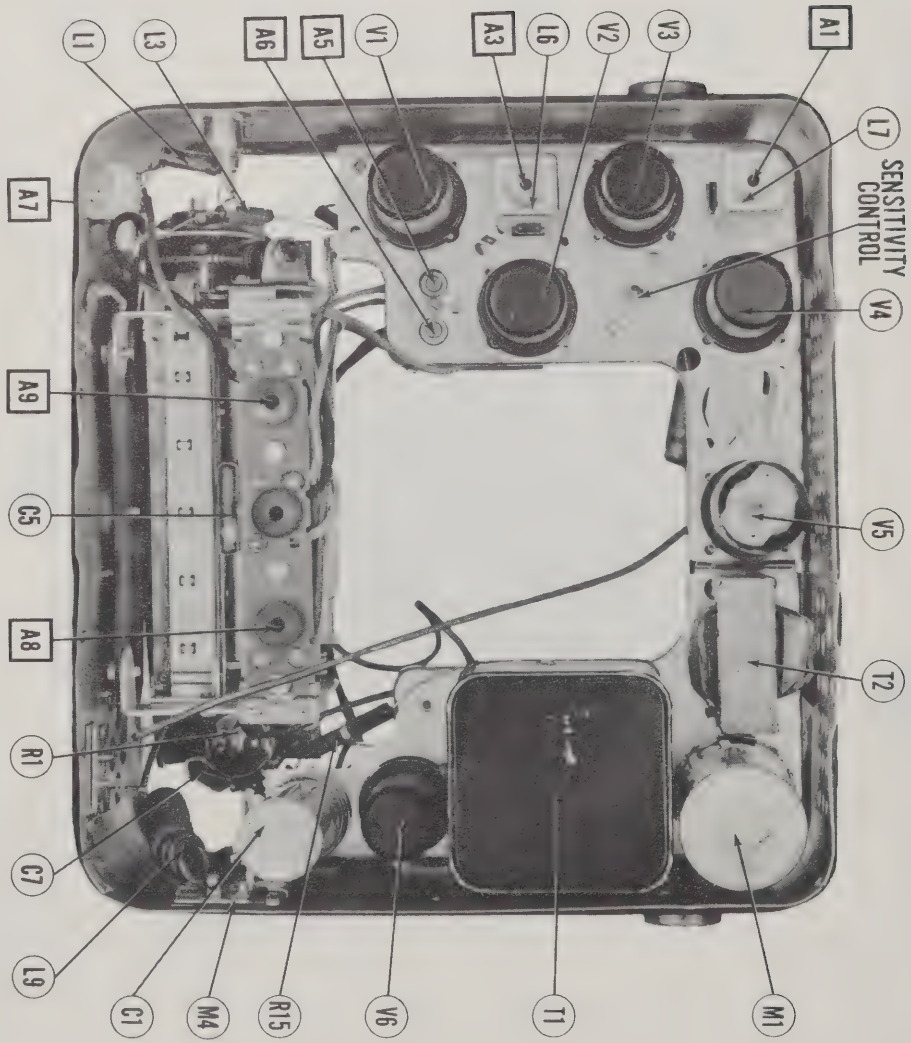
ϕ Additional parts to be used with Concentrikit.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Kaiser-Frazer PART No.	IRC PART No.	IDENTIFICATION CODES
R3	2.2Meg	½	A225	BTS-2.2Meg	RF Amp. Grid
R4	1000Ω	½	A102	BTS-1000	RF Amp. Cathode
R5	15KΩ	1	B153	BTA-15K	RF Amp. Plate
R6	330KΩ	½	A334	BTS-330K	AVC Network
R7	27KΩ	½	A273	BTS-27K	Osc. Grid - See Note 1
R8	15KΩ	2	C153	BTB-15K	Screen Dropping
R9	1Meg	½	A105	BTS-1Meg	AVC Net work
R10	47KΩ	½	A473	BTS-47K	Diode Filter
R11	6.8Meg	½	A685	BTS-6.8Meg	AF Amp. Grid
R12	33Ω	½	A330	BW-½-33	AF Amp. Cathode
R13	220KΩ	½	A224	BTS-220K	AF Amp. Plate
R14	220KΩ	½	A224	BTS-220K	Output Grid
R15	330Ω	1	B331	BW-1-330	Output Cathode - Wire Wound
R16	330Ω	½	A330	BTS-330	Feedback
R17	1800Ω	2		BW-2-1800	Filter - Wire Wound - See Note 2
R18	220Ω	1	B221		Hash Suppressor

Note 1 Some models use 22KΩ resistor in this application.
Note 2 If an IRC replacement is not used - replace with 2700Ω 2watt and 5600Ω 1 watt in parallel.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	KAISER-FRAZER PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	6.3VDC @ 4A	500VCT .050ADC			7255881	P-6747 ①	P-4071	VT-1

① Drill one new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		Kaiser-Frazer PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO* PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	5.7KΩ	3.8Ω	395Ω	.6Ω	7260712	A-3877①	A-2930①		① Drill new mounting holes.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			Kaiser-Frazer PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.				
SP1	PM	3.8Ω	7260812	ST-810 Model P69-V	69A2	
	CONE DIA.	V. C. DIA.				
SP2	6X9	1"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	KAISER-FRAZER PART No.	MEISSNER PART No.	
L1	Ant. Choke	.8Ω		7255738		
L2	Ant. Coil	1Ω		7258914		Items L2, L4 and L5 are gang tuned
L3	RF Choke	5.2Ω		7240251		
L4	RF Coil	1Ω		7258914		
L5	Osc. Coil	1.3Ω	4.5Ω	7259687		
L6	1st. IF	30Ω	30Ω	1218725		
L7	2nd. IF	30Ω	30Ω	1218726		
L8	Filament Choke	0Ω		7241708		
L9	Hash Choke	0Ω		1217846		

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				Kaiser-Frazer PART No.	CORNELL-DUBILIER PART No.	RADIART PART No.	
M1	INT	6.3V	115∿	8542	5300	5300	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			KAISER-FRAZER PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M2	SFE	14Amp	147685		307014	155014A	

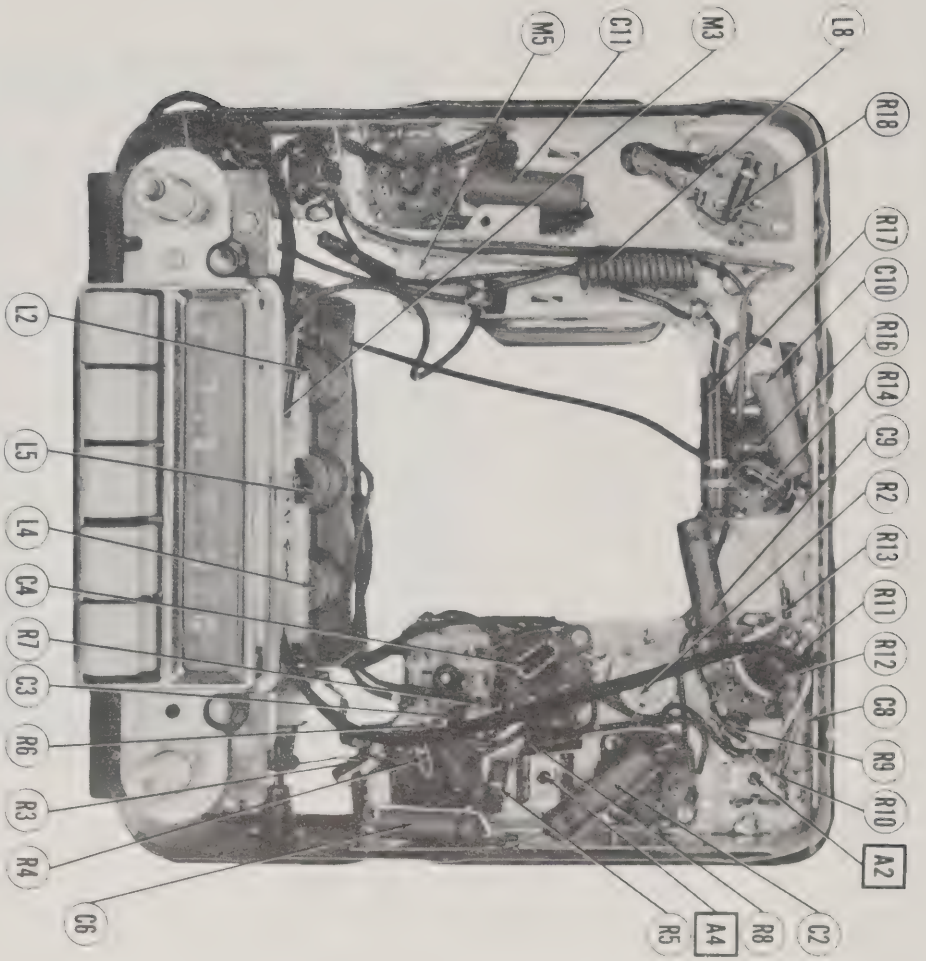
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					Kaiser-Frazer PART No.		
M3	Bayonet	6-8	.25	Blue	187981		Type #44

MISCELLANEOUS

ITEM No.	PART NAME	KAISER-FRAZER PART No.	NOTES
M4	Spark Plate	1219825	
M5	Spark Plate	1217848	
A7	Trimmer		Ant. Adj.
A6 }	Dual Trimmer		Osc. Adj.
A5 }			Osc. Adj.

CHASSIS—BOTTOM VIEW

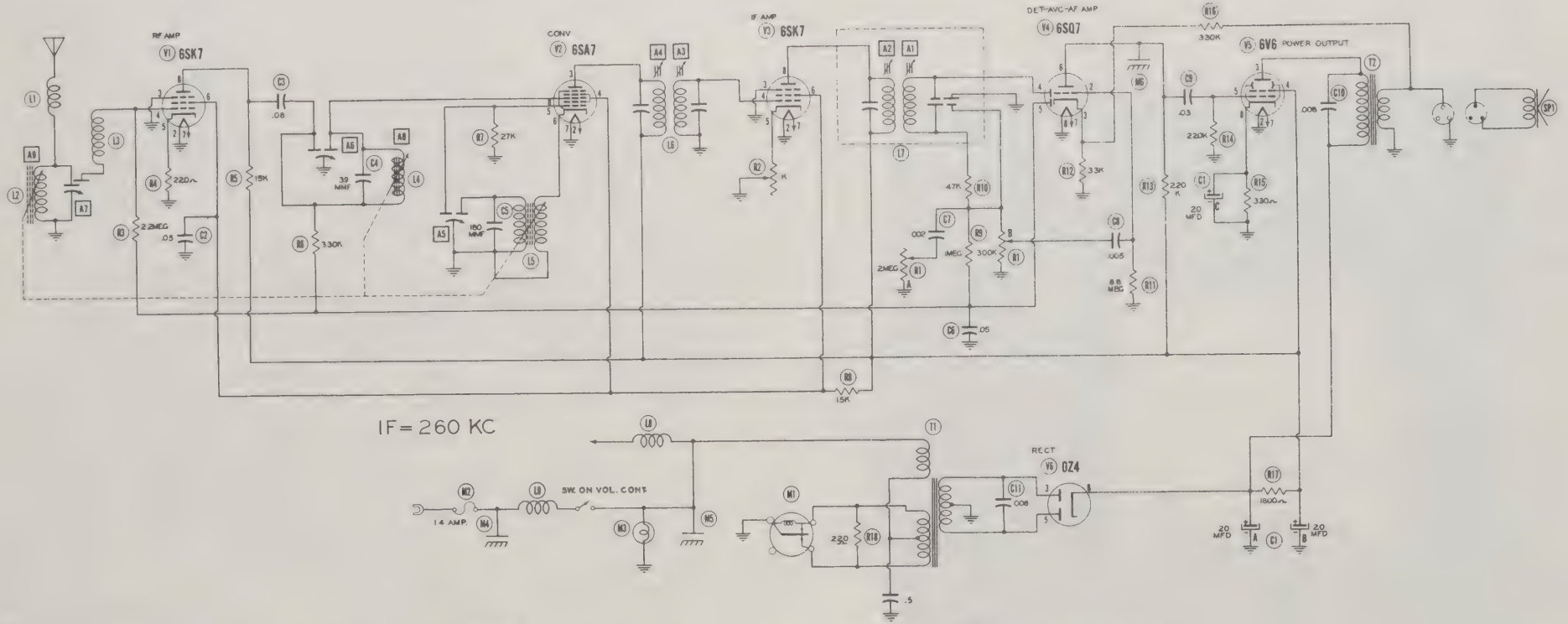


SET 139

FOLDER 9

KAISER-FRAZER MODEL 100205

KAISER-FRAZER MODEL 100205



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SK7	0V	0V	0V	.1VDC	1.4VDC	85VDC	6.3VDC	130VDC
V 2	6SA7	0V	6.3VDC	235VDC	85VDC	6.13VDC	0V	0V	-.1VDC
V 3	6SK7	0V	0V	0V	0V	5VDC	85VDC	6.3VDC	240VDC
V 4	6SQ7	0V	-.6VDC	.1VDC	-.1VDC	-.2VDC	110VDC	6.3VDC	0V
V 5	6V6GT	.1VDC	0V	250VDC	225VDC	0V	0V	6.3VDC	12VDC
V 6	0Z4	0V	0V	260VAC	0V	260VAC	0V	0V	275VDC

TAKEN WITH VTVM

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SK7	0Ω	0Ω	0Ω	3.5Meg	220Ω	†17KΩ	1Ω	†17KΩ
V 2	6SA7	0Ω	1Ω	†1800Ω	†17KΩ	27KΩ	0Ω	0Ω	1.5Meg
V 3	6SK7	0Ω	0Ω	0Ω	30Ω	0Ω 1000Ω	†17KΩ	1Ω	†1800Ω
V 4	6SQ7	0Ω	6.8Meg	32Ω	350KΩ	1.3Meg	†220KΩ	1Ω	0Ω
V 5	6V6GT	330Ω	0Ω	†400Ω	†1800Ω	220KΩ	0Ω	1Ω	330Ω
V 6	0Z4	0Ω	Inf.	300Ω	Inf	270Ω	Inf.	Inf.	100KΩ

† MEASURED FROM PIN 8 OF V6

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1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery Voltage maintained at 6.5 volts DC
5 - Nominal tolernace on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

KAY HALBERT MODELS 033, 034, 035, 036, 037, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 731, 733, 734, 735, 736, 737

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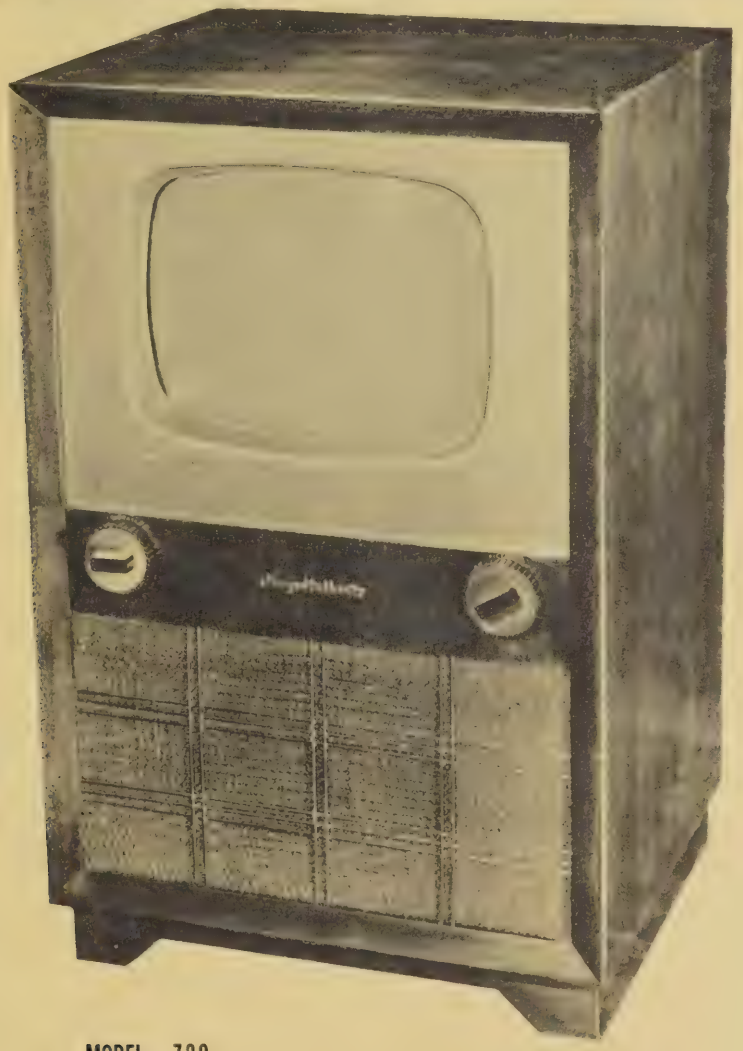

MODEL 733

KAY HALBERT MODELS 033, 034, 035, 036, 037, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 731, 733, 734, 735, 736, 737

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DATE 7-51 SET 139 FOLDER 7

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KAY HALBERT MODELS 033, 034, 035, 036, 037, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 731, 733, 734, 735, 736, 737

KAY HALBERT MODELS 033, 034, 035, 036, 037, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 731, 733, 734, 735, 736, 737

KAYE-HALBERT MODEL 733

TRADE NAME	Kaye-Halbert, Models 033 thru 037 (Ch. 242), 231 thru 241, 731, 733 (Ch. 231 or 242), 734 thru 737 (Ch. 242)
MANUFACTURER	Kaye-Halbert Corp., 3555 Hayden Ave., Culver City, Calif.
TYPE SET	Television Receiver
TUBES	Twenty Four
POWER SUPPLY	110-120 Volts AC - 60 Cycle RATING 1.9 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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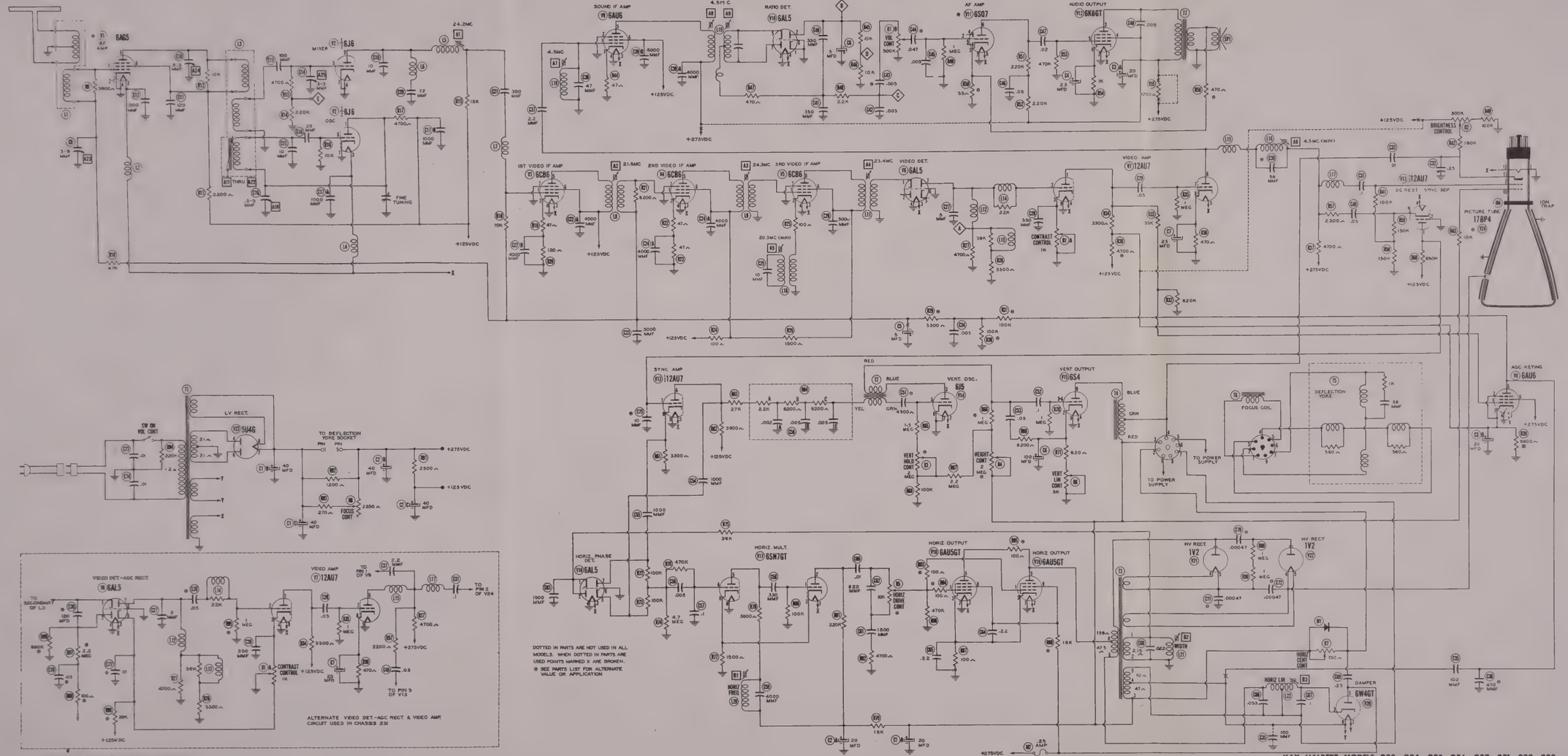

DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.
⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

ALTERNATE VIDEO DET.-AGC RECT. & VIDEO AMP. CIRCUIT USED IN CHASSIS 231

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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KAY HALBERT MODELS 033, 034, 035, 036, 037, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 731, 733, 734, 735, 736, 737

KAY HALBERT MODELS 033, 034, 035, 036, 037, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 731, 733, 734, 735, 736, 737

CHASSIS TOP VIEW

CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

KAY HALBERT MODELS 033, 034, 035, 036, 037, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 731, 733, 734, 735, 736, 737

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube , (V17), from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube, (V2), and replace it with a 6J6 which has Pin 1 removed. This will disable the local oscillator and prevent the possibility of erroneous indications.
On models which have chassis 242, employing keyed AGC, connect the negative lead of a 3 volt battery to the ungrounded lead of C5, connect the positive lead to chassis. On models which have chassis 231, without keyed AGC, the bias battery is not required.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	24.2MC (Unmod.)	Any	DC probe to Point (A). Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	21.8MC	"	"	A2	"
3.	"	"	24.3MC	"	"	A3	"
4.	"	"	23.4MC	"	"	A4	"
5.	"	"	20.5MC	"	"	A5	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	23MC (10MC SWP)	20.5MC 21.4MC 25MC	Any	Vert. amp. to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.01MFD	High side to Pin 2 (grid) of 12AU7, (V7). Low side to chassis.	Not used	4.5MC (450KC SWP)	Any	Vert. amp. to Pin 2 of picture tube. Low side to chassis.	A6	Adjust for MINIMUM 400 ∿ indication on scope.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.01MFD	High side to Pin 2 (grid) of 12AU7, (V7). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to Point (B). Common to chassis.	A7, A8	Adjust for maximum deflection.
9.	"	"	"	"	DC probe to Point (C). Common to Point (D).	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.01MFD	High side to Pin 2 (grid) of 12AU7, (V7). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to Point (B). Low side to chassis.	A7, A8	Disconnect stabilizer capacitor C8. Adjust for maximum amplitude and symmetry as per figure 2.
9.	"	"	"	"	"	Vert. amp. to Point (C). Low side to chassis.	A9	Reconnect capacitor C8. Adjust A8 so 4.5MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Leave the bias battery connected as during video IF alignment.
Complete oscillator alignment may not be required. If the oscillator seems to be off frequency approximately the same amount for a majority of the channels, it may be possible to correct them in one step using A10. It should be noted that this is an all channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A10 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch it turned to each channel.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. amp. to Point (A). Low side to chassis.	A11	Adjust to place sound marker as shown in figure 4. The video marker should be at 50%.
			207MC (10MC SWP)	205.25MC 209.75MC	12		A12	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A13	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A14	
			189MC (10MC SWP)	187.25MC 189.75MC	9		A15	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A16	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A17	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A18	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A19	
			69MC (10MC SWP)	76.25MC 71.75MC	4		A20	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A21	
			57MC (10MC SWP)	55.25MC 54.75MC	2		A22	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to Point (E). Low side to chassis.	A23, A24, A25	Adjust for response curve similar to figure 5 with markers above 50%.
12.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13			
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

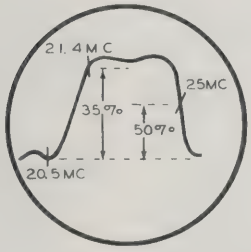


FIG.1

FIG. 2

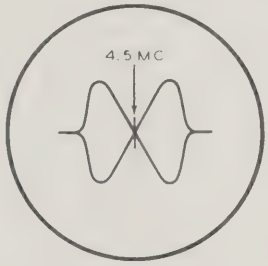


FIG. 3

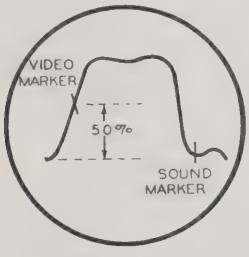


FIG.4

FIG.5

KAY HALBERT MODELS 033, 034, 035, 036, 037, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 731, 733, 734, 735, 736, 737

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	-1.2VDC	0V	6.2VDC	0V	110VDC	110VDC	0V		
V 2	6J6	75VDC	85VDC	6.2VDC	0V	-2.4VDC	§-4.6VDC	0V		
V 3	6CB6	-1.6VDC	.8VDC	6.3VAC	0V	125VDC	125VDC	0V		
V 4	6CB6	-1.7VDC	.4VDC	6.3VAC	0V	120VDC	120VDC	0V		
V 5	6CB6	0V	1.5VDC	6.3VAC	0V	100VDC	100VDC	0V		
V 6	6AL5	0V	0V	6.3VAC	0V	0V	0V	-.3VDC		
V 7	12AU7	43VDC	-.3VDC	1.8VDC	6.3VAC	6.3VAC	215VDC	0V	6VDC	0V
V 8	6AU6	43VDC	52VDC	6.3VAC	0V	-2.8VDC	270VDC	52VDC		
V 9	6AU6	0V	0V	6.3VAC	0V	270VDC	105VDC	.5VDC		
V 10	6AL5	0V	-.5VDC	0V	6.3VAC	-.3VDC	0V	-.3VDC		
V 11	6SQ7	0V	-.5VDC	0V	-3.5VDC	-3.5VDC	75VDC	0V	6.3VAC	
V 12	▯K6GT	0V	0V	235VDC	245VDC	0V	275VDC	6.3VAC	22VDC	
V 13	12AU7	24VDC	0V	35VDC	6.3VAC	6.3VAC	75VDC	24VDC	24VDC	0V
V 14	6J5	0V	6.3VAC	180VDC 65VDC	0V	-5VDC -4.2VDC	0V	0V	0V	
V 15	6S4	0V	18VDC 30VDC	0V	6.3VAC	0V	0V	0V	0V	400VDC
V 16	6AL5	.2VDC	.2VDC	6.3VAC	0V	9.8VDC	0V	-3.4VDC		
V 17	6SN7GT	-5.1VDC	115VDC	11.2VDC	.4VDC	235VDC	11.2VDC	6.3VAC	0V	
V 18	6AU5	-2.8VDC	6.3VAC	11.2VDC	0V	*	0V	0V	120VDC	
V 19	6AU5	-2.8VDC	6.3VAC	11.2VDC	0V	*	0V	0V	120VDC	
V 20	6W4GT	-2.8VDC	0V	410VDC	0V	270VDC	0V	410VDC	410VDC	
V 21	1V2	* DO NOT MEASURE								*
V 22	1V2	* DO NOT MEASURE								*
V 23	5U4G	0V	310VDC	0V	320VAC	0V	320VAC	0V	310VDC	
V 24	17BP4	0V	2.2VDC	PIN 10 400VDC	PIN 20VDC	11 100VDC	PIN 12 6.3VAC			

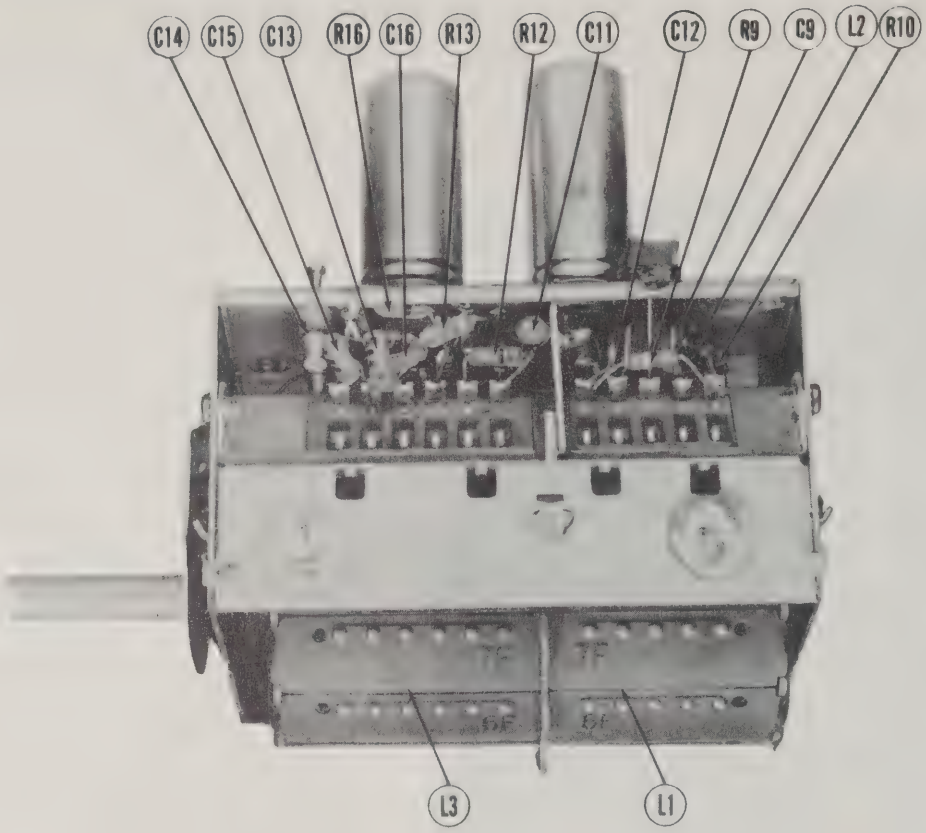
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
* DO NOT MEASURE
§ TAKEN WITH VACUUM TUBE VOLTMETER
FOCUS CONTROL FULLY COUNTER CLOCKWISE

RESISTANCE READINGS

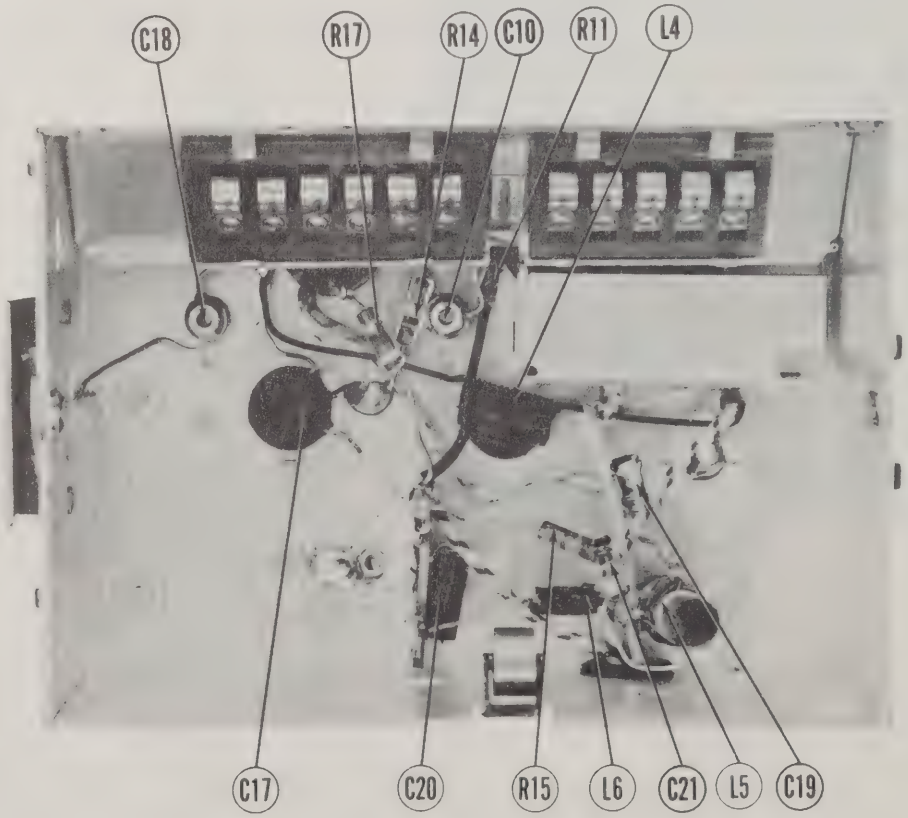
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	150KΩ	0Ω	.1Ω	0Ω	†4.8KΩ	†4.8KΩ	0Ω		
V 2	6J6	†7.3KΩ	†17KΩ	.1Ω	0Ω	224KΩ	10KΩ	0Ω		
V 3	6CB6	113KΩ	167Ω	.1Ω	0Ω	†2.6KΩ	†2.6KΩ	0Ω		
V 4	6CB6	103KΩ	94Ω	.1Ω	0Ω	†2.7KΩ	†2.7KΩ	0Ω		
V 5	6CB6	.3Ω	100Ω	.1Ω	0Ω	†4.2KΩ	†4.2KΩ	0Ω		
V 6	6AL5	.3Ω	Inf.	.1Ω	0Ω	Inf.	0Ω	2KΩ		
V 7	12AU7	†10KΩ	2KΩ	1KΩ	.1Ω	.1Ω	†4.8KΩ	1Meg	470Ω	0Ω
V 8	6AU6	43KΩ	6.2KΩ	.1Ω	0Ω	200KΩ	†150Ω	6.2KΩ		
V 9	6AU6	1.3Ω	0Ω	.1Ω	0Ω	†150Ω	†2.6KΩ	47Ω		
V 10	6AL5	0Ω	20KΩ	0Ω	.1Ω	Inf.	0Ω	Inf.		
V 11	6SQ7	0Ω	1Meg	28Ω	Inf.	Inf.	†441KΩ	0Ω	.1Ω	
V 12	6K6GT	0Ω	0Ω	†1.9KΩ	†1.3KΩ	470KΩ	†150Ω	.1Ω	1KΩ	
V 13	12AU7	†680KΩ	0Ω	300KΩ	.1Ω	.1Ω	†6.5KΩ	†680KΩ	3.3KΩ	0Ω
V 14	6J5	0Ω	.1Ω	#2.3Meg #1.1Meg	0Ω	3.6Meg 1.6Meg	0Ω	0Ω	0Ω	
V 15	6S4	Inf.	5.8KΩ 820Ω	1Meg	.1Ω	0Ω	1Meg	Inf.	Inf.	#1.2KΩ
V 16	6AL5	39KΩ	39KΩ	.1Ω	0Ω	4.8Meg	0Ω	4.8Meg		
V 17	▯SN7GT	100KΩ	#238KΩ	1.5KΩ	5.1Meg	#24KΩ	1.5KΩ	.1Ω	0Ω	
V 18	▯AU5	470KΩ	.1Ω	100Ω	Inf.	#147Ω	Inf.	0Ω	†18KΩ	
V 19	6AU5	470KΩ	.1Ω	100Ω	Inf.	#47Ω	Inf.	0Ω	†18KΩ	
V 20	6W4GT	200KΩ	Inf.	100KΩ	Inf.	†150Ω	Inf.	#12Ω	#12Ω	
V 21	1V2	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								#210Ω
V 22	1V2	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								# Inf.
V 23	5U4G	Inf.	12KΩ	Inf.	21Ω	Inf.	21Ω	Inf.	12KΩ	
V 24	17BP4	0Ω	250KΩ	PIN 10 #10KΩ	PIN 300KΩ	11 230KΩ	PIN 12 .1Ω			

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
† MEASURED FROM PIN 2 OF V23
# MEASURED FROM PIN 3 OF V20
FOCUS CONTROL FULLY COUNTER CLOCKWISE

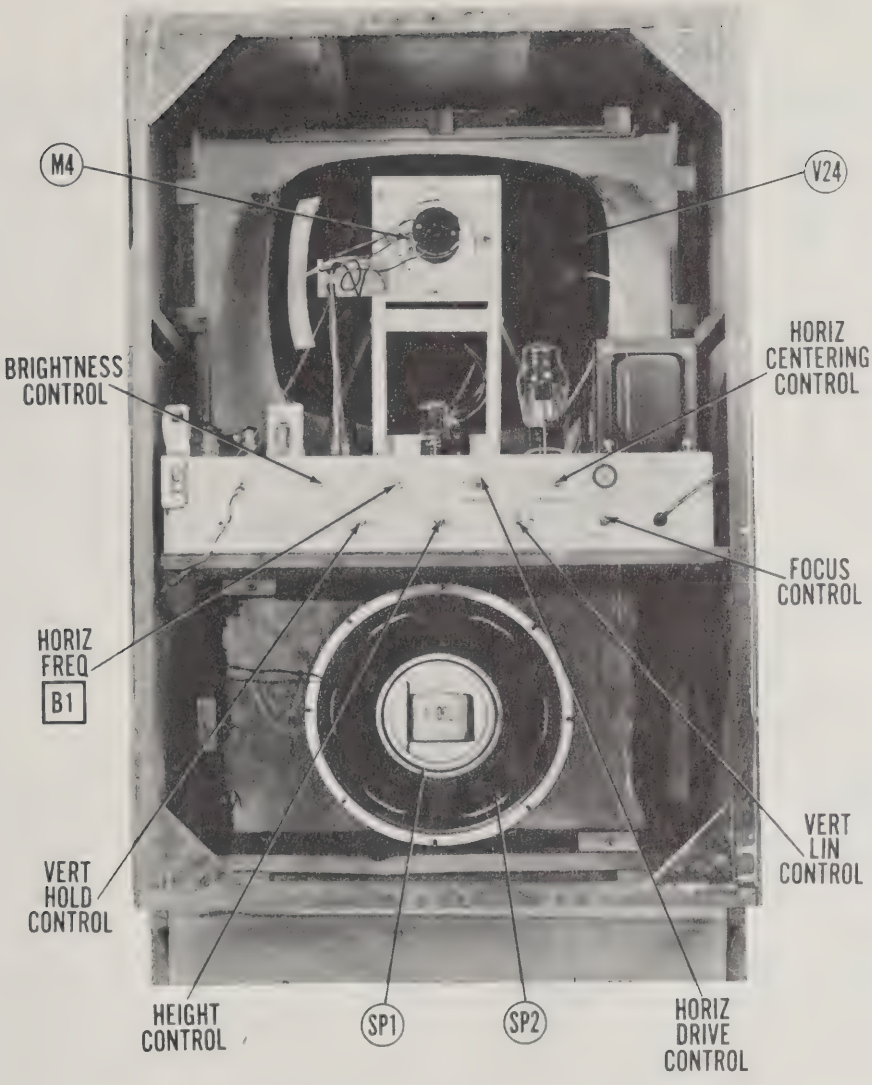
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Adjust the horizontal frequency slug, (B1), to the center of the range over which the picture synchronizes.

Turn the horizontal drive control to fully clockwise. If vertical lines or instability appears in the picture, reduce the drive just sufficiently to remove the undesireable condition.

Adjust the width slug, (B2), until the picture fills the mask horizontally.

Adjust the horizontal linearity slug, (B3), until the picture is symmetrical from left to right.

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove nine wood screws from rear cover. Remove rear cover.
3. Disconnect speaker.
4. Remove four metal screws securing chassis to cabinet. Remove chassis.
5. Remove four phillips head screws from speaker. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECCESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: KAYE-HALBERT PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier		6BC5	6BC5	TBD
B	RF Amplifier		6AG5	6AG5	TBD
V2	Converter		6J6	6J6	TBF
V3	1st Video IF Amp.		6CB6	6CB6	6CK
V4	2nd Video IF Amp.		6CB6	6CB6	6CK
V5	3rd Video IF Amp.		6CB6	6CB6	6CK
V6	Video Detector		6AL5	6AL5	6BT
V7	Video Amplifier		12AU7	12AU7	9A
V8	AGC Keying		6AU6	6AU6	TBK
V9	Sound IF Amp.		6AU6	6AU6	TBK
V10	Ratio Detector		6AL5	6AL5	6BT
V11A	AF Amplifier		6SQ7GT	6SQ7GT	8Q
B	RF Amplifier		6AV6	6AV6	TBT
V12	Audio Output		6K6GT	6K6GT	7S
V13	Sync. Separator - Sync. Amplifier - DC Restorer		12AU7	12AU7	9A
V14	Vert. Oscillator		6J5	6J5	6Q
V15	Vert. Output		6B4	6B4	9AC
V16	Horiz. Phase Det.		6AL5	6AL5	6BT
V17	Horiz. Mult.		6SN7GTA	6SN7GTA	8BD
V18	Horiz. Output		6AU5	6AU5	7BZ
V19	Horiz. Output		6AU5	6AU5	7BZ
V20	Damper		6W4	6W4	4CG
V21	HV Rectifier		1V2	1V2	9U
V22	HV Rectifier		1V2	1V2	9U
V23	LV Rectifier		5U4G	5U4G	5T
V24A	Picture Tube		17BP4	17BP4	12D
B	Picture Tube		16RP4	16RP4	12D
C	Picture Tube		16AP4	16AP4	12D
D	Picture Tube		19AP4	19AP4	12D
E	Picture Tube		20DP4	20DP4	13D

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	KAYE-HALBERT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	20	450	B6525	AF884J4A		UPT44145		TVL-3787	▲ Decoupling
B	40	350		AF4-33					■ Filter
C	40	350				UPT44145			▲ Filter
C2A	20	450	B6525	AF884J4A				TVL-3787	▲ Decoupling
B	40	350		AF4-33					■ Filter
C	40	350							▲ Filter
C3A	20	350		PRS450/20-20		BRD2235A		TVA-2730	Audio Output Decoupling
B	20	350							AGC Keying Cathode
C4	25	50	B5150	PRS50/25		BR255A		TVA-1306	Audio Output Cathode
C5	5	50	B5120	PRS150/4		BR550		TVA-1303	AGC Filter †
C6	100	50	B1580	PRS50/100		BRH50L		TVA-1310	Vert. Output Cathode
C7	25	50	B5150	PRS50/25		BR255A		TVA-1306	Video Amp. Cathode
C8	5	50	B5120	PRS150/4		BR550		TVA-1303	Stabilizing Cap
C9	3-9				829-3				Variable Trimmer
C10	.5-3								Variable Trimmer
C11	120			SI120	D6-121		GP2K-121	19C29	RF Amp. Decoupling
C12	1000			SI1000	D6-102		GP2L-102	19C1	RF Amp. Fil.
C13	100			SI100N750	TCN-100		N750L-101		RF Coupling
C14	.5-5				829-5				Variable Trimmer
C15	10			SI10N750	TCN-10		N750K-100		Fixed Trimmer
C16	20			SI20NPO	TCZ-30		NPOK-200		Osc. Grid Cap
C17A	1000			BPD-2X001	DD-2-202		812-001	29C7	Conv. Fil.
B	1000								RF Bypass
C18	.5-3				829-3				Variable Trimmer
C19	10			SI10NPO	TCZ-10		NPOK-100	19C3	Fixed Trimmer
C20	72	500							Fixed Padder
C21	300			SI300	D6-301		GP2K-301	MS-33	IF Coupling
C22A	4000		B470	BPD-2X004	D6-402	1D5D4	822-004	36C2	1st Video IF Decoupling
B	4000				D6-402	1D5D4			1st Video IF Cathode
C23	5000		B455	BPD-005	DD-502	1D5D5	811-005	29C1	AGC Filter
C24A	4000		B470	BPD-2X004	D6-402	1D5D4	822-004	36C2	2nd Video IF Decoupling
B	4000				D6-402	1D5D4			2nd Video IF Cathode
C25	10	500	B530	1469-0000I	TCZ-10	5R5Q4	NPOK-100	MS-41	Fixed Trimmer
C26	5000		B455	BPD-005	DD-502	1D5D5	811-005	29C1	3rd Video IF Decoupling
C27	5		B145	SI5		5W5V5	GP1K-050	MS-55	RF Bypass
C28	330		B1190	SI330	D6-331		GP2K-331	19C14	Video Amp. Cathode
C29	.05	400	B2420	P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C30	56		B197	SI56	D6-560		GP1K-560		Fixed Trimmer ††
C31	.1	600	B2560	P488-1	DF-104	PTE6P1		6TM-P1	Video Coupling
C32	25	600	B2620	684-25		GP6P25		6TM-P25	Picture Tube Cathode
C33	.01	400	B2300	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Vert. Sweep Coupling
C34	.005	600	B2200	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	AGC Filter
C35	100		B8130						AGC Filter
C36	470		SI470		D6-471	5R5T5	GP2K-471	19C15	AGC Filter ††
C37	3.2		B125		TCZ-4.2				Sound IF Coupling
C38	47		B190	SI47	D6-470		GP1K-470	19C25	Fixed Trimmer
C39A	4000		B470	BPD-2X004	D6-402	1D5D4	822-004	36C2	Sound IF Plate
B	4000				D6-402	1D5D4			Sound IF Screen
C40	330		B240	SI330	D6-331	5R5T3	GP2K-331	19C14	Diode Load Cap
C41	330		B240	SI330	D6-331	5R5T3	GP2K-331	19C14	Diode Load Cap
C42	.003	600	B2960	P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	De-emphasis
C43	.005	600	B2200	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Coupling †
C44	.047	400	B2950	P488-047	D6-303	PTE6S3	GP2-333-303	4TM-S47	Audio Coupling †
C45	.003	600	B2960	P688-003	D6-302	PTE6D3	GP2-333-303	6TM-D3	De-emphasis
C46	.05	600	B2480	P688-05	DF-503	PTE6S5		6TM-S5	AF Amp. Plate
C47	.02	400	B2340	P488-02	DF-203	PTE4S2		4TM-S2	Audio Coupling
C48	.005	600	B2200	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Output Plate
C49	.05	600	B2480	P688-05	DF-503	PTE6S5		6TM-S5	Sync. Coupling
C50A	.002		K220	P688-002	◆	PTE6D2	GP2-333-202	6TM-D2	Integrator Net
B	.005			P688-005	PC-100	PTE6D5	GP2-333-502	6TM-D5	Integrator Net
C	.005			P688-005		PTE6D5	GP2-333-502	6TM-D5	Integrator Net
C51	4000	500		1467-005	D6-502	1D5D6	GP2-333-502	1FM-25	Vert. Osc. Grid ††

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	KAYE-HALBERT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C52	.1	600	B2560	P688-1	DF-104	PTE6P1		6TM-P1	Vert. Sweep Coupling
C53	.05	600	B2480	P688-05	DF-503	PTE6S5		6TM-S5	Vert. Discharge
C54	1000		B270	SI1000	D6-102	1W5D1	GP2L-102	19C1	Horiz. Sync. Coupling
C55	1000		B270	SI1000	D6-102	1W5D1	GP2L-102	19C1	Horiz. Sync. Coupling
C56	.005	600	B2200	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Horiz. Sync. Coupling
C57	.1	200	B2520	P288-1	DF-104	PTE4P1		2TM-P1	Horiz. Osc. Grid
C58	330	500	B1190	SI330	D6-331	5R5T3	GP2K-331	19C14	Horiz. MV Feedback
C59	4000	500	B1712	1467-004	D6-402	1D5D4	GP2-333-402	1FM-24	Fixed Trimmer
C60	.01	400	B2300	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Horiz. Sweep Coupling
C61	1500		B280	SI1500	D6-152	1D5D15	GP2L-152	29C8	Horiz. Discharge
C62	830	500	B1390	1464-0008		ZR5T8		MS-38	Horiz. Discharge
C63	1500		B280	SI1500	D6-152	1W5D15	GP2L-152	29C28	Integrator Cap
C64	.22	400	B3100	P488-22		GT4P25		4TM-P22	Horiz. Output Screen
C65	.22	400	B3100	P488-22		GT4P25		4TM-P22	Horiz. Output Cathode
C66	.033	600	B2960	P688-033					Damper Filter
C67	.1	400	B3060	P488-1	DF-104	PTE4P1		4TM-P1	Damper Filter
C68	.022	400	B2950	P488-022		PTE6S2		4TM-S22	Fixed Trimmer
C69	.25	600	B3620	684-25		GP6P25		6TM-P25	Horiz. Sweep Coupling
C70	.00047	6000	B8120	P6088-0005		PTE60T5		TVM-356	HV Doubler *
C71	.00047	6000	B8120	P6088-0005		PTE60T5		TVM-356	HV Filter *
C72	.00047	6000	B8120	P6088-0005		PTE60T5		TVM-356	HV Filter *
C73	.01	400	B2300	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Line Filter
C74	.01	400	B2300	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Line Filter
C75	10		SI10	D6-100	5W5Q1	GP1K-100	19C19	Sync. Sep. Plate **	
C76	.05	400	B2420	P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling **
C77	.01	400	B2300	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	RF Bypass **
C78	120		B217	SI120	D6-121	5W5T15	GP1K-121	19C29	Video Coupling **
C79	.05	400	B2420	P488-05	DF-503	PTE4S5		4TM-S5	AGC Filter **

† Some models use 1MFD(Mfgrs. Part # B2800)in this application.
‡ Some models use .022 MFD (Mfgrs. Part # B2950) in this application.
†† Some models use 5000 MMF (Mfgrs. Part # B1765) in this application.
* Chassis Model 231 use 500MMFD in this application.
†† Not used in chassis model 231.
** Used in chassis model 231 only.
◆ Items C50A, C50B, C50C, R64A, R64B, R64C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	KAYE-HALBERT PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1000Ω	½		Concentrikit			
B	500KΩ	½	M-124	Bll-108 #			Contrast Control - Front
C	Shaft End			Bl3-133 #			Volume Control - Rear
D	Switch	½		E-187 #	RTV-282		Attach Per Instruction in "Concentrikit"
R2A	500KΩ	½	M-120	Qll-133	AM-58-8	AN-59	Attach Per Instructions in "Concentrikit"
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Brightness Control
R3A	2Meg	½		Qll-139	AM-83-8	AN-75	Attach to R2A Per Instructions
B	Shaft			Not req.	FKS-1/4	AK-1	Vertical Hold Control - See Note 1
R4A	2Meg	½		Qll-139	AM-83-S	AN-75	Attach to R3A Per Instructions
B	Shaft			Not req.	FKS-1/4	AK-1	Height Control - See Note 1
R5A	10KΩ	½	M122	Qll-116	AM-27-8	AN-14	Attach to R4A Per Instructions
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Horizontal Drive Control
R6A	5000Ω	½	M110	Qll-114	AM-19-8	AN-10	Attach to R5A Per Instructions
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Vertical Linearity Control
R7	750Ω	2	M126	W-750	43-750		Attach to R6A Per Instructions
R8	3250Ω	4	M112		RTV-9	8VS-926	Horizontal Centering Control - Wire Wound
							Focus Control - Wire Wound

Additional parts to be used with "Concentrikit".
Note 1. Some models use 1 meg control in this application. Part # M106.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	Kaye-Halbert PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R9	3900Ω	½		BTS-3900	Antenna Coil Shunt
R10	47KΩ 20%	½		BTS-47K	AGC Network
R11	2200Ω 20%	½		BTS-2200	RF Amp. Decoupling
R12	10KΩ	½		BTS-10K	RF Coil Shunt
R13	4700Ω	½		BTS-4700	Mixer Grid
R14	220KΩ 20%	½		BTS-220K	Mixer Grid
R15	15KΩ 20%	½		BTS-15K	Mixer Plate
R16	10KΩ	½		BTS-10K	Oscillator Grid
R17	4700Ω	½		BTS-4700	Oscillator Plate
R18	10KΩ	½	A755		1st Video IF Amp. Grid
R19	47Ω	½	A335		1st Video IF Amp. Cathode
R20	120Ω	½	A410	BTS-120	1st Video IF Amp. Cathode
R21	820Ω	½	A740		2nd Video IF Transformer Shunt
R22	47Ω	½	A335		2nd Video IF Amp. Cathode
R23	47Ω	½	A335		2nd Video IF Amp. Cathode
R24	100Ω	½	A395	BTS-100	Decoupling
R25	100Ω	½	A395	BTS-100	3rd Video IF Amp. Cathode
R26	1500Ω	½	A605	BTS-1500	3rd Video IF Amp. Decoupling
R27	4700Ω	½	A695	BTS-4700	Video Det. Diode Load
R28	3300Ω	½	A685	BTS-3300	Video Det. Diode Load
R29	3300Ω	½	A685	BTS-3300	AGC Network - See Note 7
R30	100KΩ	½	A935	BTS-100K	AGC Network - See Note 7
R31	100KΩ	½	A935	BTS-100K	AGC Network - See Note 7
R32	820KΩ	½	A1100	BTS-820K	AGC Keying Grid
R33	33KΩ	½	A845	BTS-33K	Voltage Divider
R34	3300Ω	½	A665	BTS-3300	Video Amp. Plate
R35	1Meg	½	A1115	BTS-1Meg	Video Amp. Grid
R36	470Ω	½	A515	BTS-470	Video Amp. Cathode
R37	4700Ω	1	A2695	BTA-4700	Video Amp. Plate
R38	4700Ω	1	A2695	BTA-4700	Voltage Divider - See Note 6 and 7
R39	6800Ω	1	A2720	BTA-6800	Voltage Divider - See Note 7
R40	100KΩ	½	A935	BTS-100K	Voltage Divider
R41	100KΩ	½	A935	BTS-100K	Picture Tube Grid
R42	180KΩ	½	A980	BTS-180K	Picture Tube Cathode
R43	10KΩ	½	A755	BTS-10K	Acc. Anode Load
R44	47Ω	½	A335		Sound IF Amp. Cathode

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	KAYE-HALBERT† PART No.	IRC PART No.	IDENTIFICATION CODES
R45	10KΩ	½	A755	BTS-10K	Ratio Det. Diode Load
R46	10KΩ	½	A755	BTS-10K	Ratio Det. Diode Load
R47	470Ω	½	A515	BTS-470	Balancing
R48	22KΩ	½	A815	BTS-22K	De-emphasis
R49	1Meg	½	A1115	BTS-1Meg	AF Amp. Grid
R50	33Ω	1	A320	BW-1-33	AF Amp. Cathode - Wire Wound - See Note 2
R51	220KΩ	½	A995	BTS-220K	AF Amp. Plate
R52	220KΩ	½	A995	BTS-220K	AF Amp. Plate
R53	470KΩ	½	A1055	BTS-470K	Output Grid
R54	1000Ω	1	A2575	BTA-1000	Output Cathode
R55	1200Ω	1	A2590	BTA-1200	Decoupling
R56	470Ω	1		BW-1-470	Feedback - Wire Wound - See Note 3
R57	2200Ω	½	A635	BTS-2200	Isolation
R58	150KΩ	½	A965	BTS-150K	DC Restorer Diode Load
R59	150KΩ	½	A965	BTS-150K	Sync. Sep. Cathode
R60	680KΩ	½	A1085	BTS-680K	Sync. Sep. Plate
R61	3300Ω	½	A665	BTS-3300	Sync. Amp. Cathode
R62	3900Ω	½	A680	BTS-3900	Sync. Amp. Plate
R63	27KΩ	½	A830	BTS-27K	Integrator
R64A	22KΩ	½	K220 ◆	BTS-22K	Integrator
B	8200Ω	½		BTS-8200	Integrator
C	8200Ω	½		BTS-8200	Integrator
R65	1.5Meg	½	A1145	BTS-1.5Meg	Vertical Oscillator Grid
R66	1Meg	½	A1115	BTS-1Meg	Vertical Oscillator Plate - See Note 4
R67	2.2Meg	½	A1175	BTS-2.2Meg	Voltage Divider
R68	100KΩ	½	A935	BTS-100K	Voltage Divider
R69	8200Ω	½	A740	BTS-8200	Vertical Peaking
R70	1Meg	½	A1115	BTS-1Meg	Vertical Output Grid
R71	820Ω	½	A560	BTS-820	Vertical Output Cathode
R72	100KΩ	½	A935	BTS-100K	Horizontal Phase Det. Diode Load
R73	100KΩ	½	A935	BTS-100K	Horizontal Phase Det. Diode Load
R74	4.7Meg	½	A1235	BTS-4.7Meg	Horizontal Phase Det. Diode Load
R75	39KΩ	½	A680	BTS-39K	Horizontal Feedback
R76	470KΩ	½	A1055	BTS-470K	Horizontal AFC Filter
R77	1500Ω	½	A605	BTS-1500	Horizontal MV Cathode
R78	5600Ω	½	A710	BTS-5600	Horizontal MV Plate
R79	18KΩ	1	A2800	BTA-18K	Horizontal MV Plate Decoupling
R80	100KΩ	½	A935	BTS-10K	Horizontal MV Grid
R81	220KΩ	½	A995	BTS-220K	Horizontal MV Plate
R82	4700Ω	½	A695	BTS-4700	Horizontal Peaking
R83	100Ω	½			Parasitic Suppressor - See Note 5
R84	100Ω	½			Parasitic Suppressor - See Note 5
R85	100Ω	½			Parasitic Suppressor - See Note 5
R86	470KΩ	½	A1055	BTS-470K	Horizontal Output Grid
R87	100Ω	2	A4395	BW-2-100	Horizontal Output Cathode
R88	18KΩ	2	A4800	BTS-18K	Horizontal Output Screen - See Note 6
R89	1Meg 20%	½	A7150	BTA-1Meg	HV Rectifier Load
R90	1Meg 20%	1	A7150	BTA-1Meg	HV Rectifier Load
R91	2500Ω	10	A6280	1 3/4A-2500	Filter - Wire Wound
R92	1200Ω	1	A2590	BTA-1200	Focus Coil Shunt
R93	270Ω	2	A4470	BW-2-270	Focus Coil Shunt
R94	220KΩ	½	A995	BTS-220K	Isolation
R95	1Meg	½	A1115	BTS-1Meg	Video Amp. Grid - See Note 8
R96	680KΩ	½	A1085	BTS-680K	AGC Load - See Note 8
R97	2.2Meg	½	A1175	BTS-2.2Meg	AGC Network - See Note 8
R98	100Ω	½	A395	BTS-100	AGC Network - See Note 8
R99	39KΩ	1		BTA-39K	Voltage Divider - See Note 8

◆ Items R64A, R64B, R64C, C50A, C50B and C50C are combined into one unit.
Note 2. Some models use 33Ω resistor in this application.
Note 3. Some models use 560Ω resistor in this application.
Note 4. Some models use 560KΩ resistor in this application.
Note 5. Some models use 47Ω resistor in this application.
Note 6. Some models use parallel resistors in this application to obtain desired value.
Note 7. Used only in chassis 243.
Note 8. Used only in chassis 231.
Note 9. Chassis 231 uses 1.5 meg resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: KAYE-HALBERT PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC ⑨ 1.9A	620VCT .300ADC	5VAC ⑨ 3A	6.3VAC ⑨ 1.2A SEC. 4 6.3VAC ⑨ 8.4A	C101		P-3189 ④	

④ Drill two new mounting holes.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	KAYE-HALBERT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	270Ω	1.5KΩ	C-3102	A-8111 ①	A-3000 ①	TBG-1 ①	Vert. Block Osc. Trans.
T3	205Ω	57Ω	C-2112		HV0-5 ③		Horiz. Output Trans.
	Tap	Tap 47Ω					
	47.5Ω	SEC. 2					
		2.15Ω					
		SEC. 3					
		0Ω					
		SEC. 4					
		0Ω					
T4	1.14KΩ	13Ω	C-2304	A-8113	A-3036 ①		Vertical Output
T5A	36Ω		H-6604	DY-7	MDF-70		Horizontal Deflection Coil
B	60Ω						Vertical Deflection Coil
T6	170Ω		H3102		MF-1 ②		Focus Coil

① Drill one new mounting hole.
② Use "L" type mounting brackets.
③ Use MWC-1 for 2 microhenries AGC winding.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		Kaye-Halbert PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T7	6.4KΩ	3.4Ω	590Ω	.6Ω	C-2020	A-3856	A-3020 ①	R0-13 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	KAYE-HALBERT PART No.	VIKING PART No.	QUAM PART No.	
SP1	PM	3.4Ω	12JB-1	12J12	12A4A	
	CONE DIA.	V. C. DIA.				
SP2	11 3/4"	1"				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Kaye-Halbert PART No.	MEISSNER PART No.	
L1	Ant. Coil	0Ω	0Ω			
L2	Fil. Choke	0Ω				
L3	RF, Mixer Grid And Osc. Coil	0Ω				
L4	Fil. Choke	0Ω				
L5	1st Video IF	.5Ω				
L6	RF Choke	0Ω				
L7	Coupling Choke	1Ω		H110		
L8	2nd Video IF	.3Ω	.3Ω	H112		
L9	3rd Video IF	.3Ω	.3Ω	H112		
L10	Sound Trap	0Ω	0Ω	H6100		
L11	4th Video IF	.3Ω	.3Ω	H114		
L12	Peaking	4Ω		H2106		36 Microhenries (Black Dot)
L13	Peaking	10Ω		H2108	19-1921	180 Microhenries (Wound on 39KΩ resistor-White Dot)
L14	Peaking	8Ω		H2112	19-1921	120 Microhenries (Wound on 22KΩ resistor - Blue Dot)
L15	Peaking	4Ω		H2106		36 Microhenries (Black Dot)
L16	4.5MC Trap	1.6Ω		H6102		
L17	Peaking	6.5Ω		H2110	19-1920	93 Microhenries (Red Dot)
L18	1st Sound IF	1.3Ω		H116		
L19	Ratio Det. Trans.	4.8Ω	.3Ω	H110		Tap 1Ω
L20	Horiz. Osc.	110Ω		H5104		
L21	Width Coil	2.7Ω		H3602		
L22	Horiz. Lin.	7.5Ω		H4102		

SELENIUM RECTIFIER

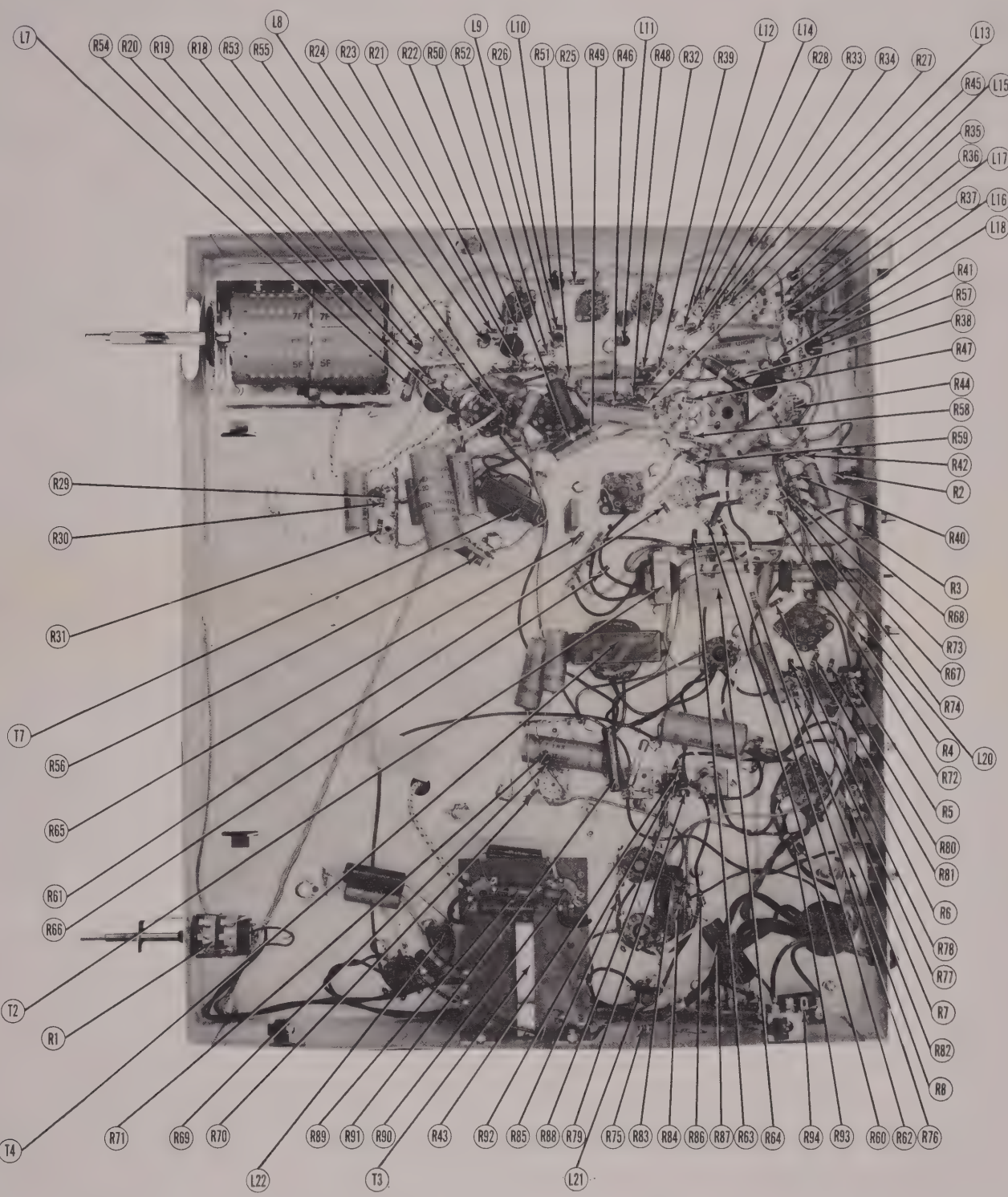
ITEM No.	RATING	REPLACEMENT DATA			NOTES
	CURRENT	Kaye-Halbert PART No.	SYLVANIA PART No.	SELETRON PART No.	
M1	.082A			1M1	

FUSES

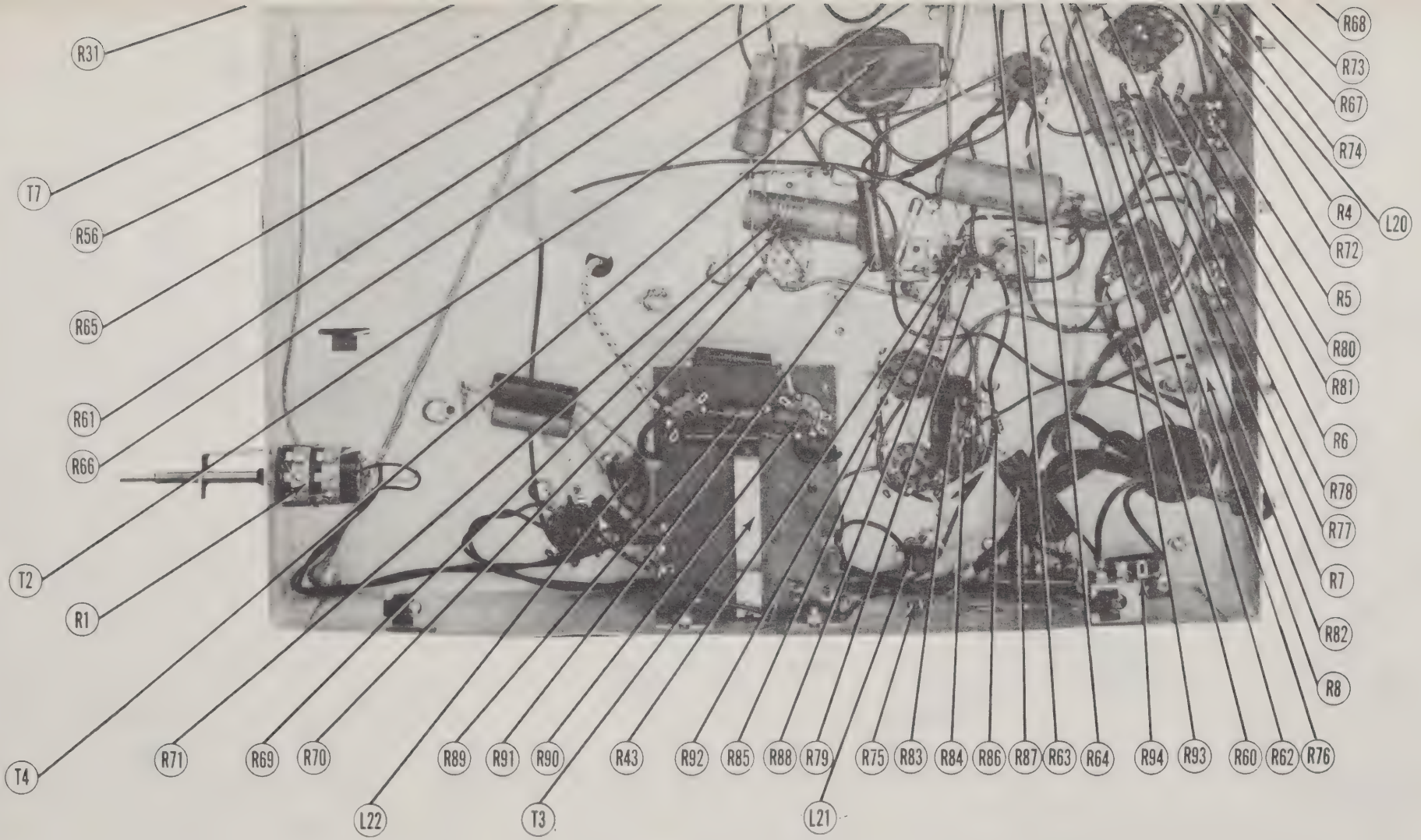
ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			KAYE-HALBERT PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M2	3AG PigTail	.250			318.250		

MISCELLANEOUS

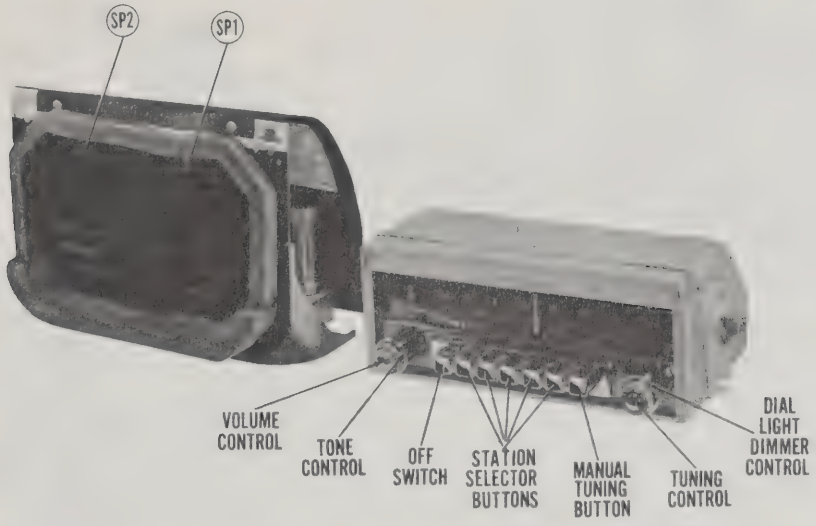
ITEM No.	PART NAME	KAYE-HALBERT PART No.	NOTES
M3	RF Tuner		
M4	Ion Trap		



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



MOPAR
MODELS 812, 813, 815, 816, 817

MOPAR MODEL 815

TRADE NAME	Mopar, Models 812, 813, 815, 816, 817
MANUFACTURER	Philco Corp., Tioga and "C" Sts., Philadelphia, Pa.
TYPE SET	Battery Operated Custom-Built Plymouth, Dodge and Chrysler Superheterodyne Receiver
TUBES (EIGHT)	Types 6BA6 RF Amp., 6BE6 Converter, 6BA6 IF Amp., 6AV6 DET.-AVC-AF, 6C4 Phase Inverter, (2) 6AQ5 Power Output, 6F4 Rectifier
POWER SUPPLY	6 Volt Storage Battery — RATING 7.8 Amp. @ 6.3 Volts DC
TUNING RANGE—BROADCAST	535-1605KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD.	High side to pin 7 (Grid) of 6BE6 (V2). Low side to chassis.	455KC (400~ Mod.)	Depress manual button and tune to 540KC.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	Two 40MMF. capacitors See fig. 1	High side thru dummy to ant. receptacle. Low side to chassis.	"	Depress any station selector button.	"	A5	Adjust for MINIMUM output.
3.	"	"	1605KC	Depress manual button. Tune to high freq. end stop.	"	A6	Adjust for maximum output.
4.	"	"	1400KC	Tune for max. output.	"	A7, A8	Adjust for maximum output. Set pointer to 1400 on dial.
5.	"	"	580KC	580KC	"	A9	Rock tuning gang while adjusting for maximum output. Repeat steps 3 & 4. If considerable change is required repeat steps 5, 3, and 4 in that order.

After set is installed, fully extend the antenna and tune in a weak station near 1400KC. Adjust A7 for maximum output. Then depress PB5 and tune it, as outlined under pushbutton adjustments, to a weak station near 1400KC. Adjust A10 for maximum output.

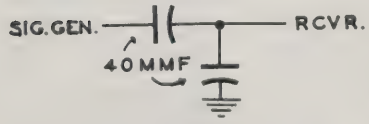


FIG. 1

PUSHBUTTON ADJUSTMENTS

The frequency ranges of the pushbuttons are as follows: PB1 530-1020KC, PB2 610-1200KC, PB3 700-1410KC, PB4 740-1480KC, PB5 840-1605KC. Make a list of the desired stations, making sure each station is within the tuning range of the selected pushbutton. Pull the crome plated pushbutton cap off. Depress the button and tune in the desired station by means of the knurled plastic knob under the pushbutton cap. Repeat this procedure for each pushbutton.

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PHILCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amplifier	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amplifier	6BA6	6BA6	7BK	
V4	DET:-AVC-AF	6AV6	6AV6	7BT	
V5	Phase Inverter	6C4	6C4	6BG	
V6	Power Output	6AQ5	6AQ5	7BZ	
V7	Power Output	6AQ5	6AQ5	7BZ	
V8	Rectifier	6X4	6X4	5BS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	20	350	61-0086	AF42H4A		UP2135C		TVL-3634	■ Filter
B	10	350							▲ Filter
C	20	25							Output Cathode
C2	.047	200	45-3505-28	P288-047	DF-203	PTE4S5		2TM-S47	AVC Filter
C3	.047	200	45-3505-28	P288-047	DF-203	PTE4S5		2TM-S47	Decoupling
C4	39	500	60-00395417	1469-00004	TCZ-39	5R5Q4	NP0L-390	MS-44	Fixed Trimmer
C5	56	500	60-00565417	SI56	D6-560	5W5Q5	GP1K-560	1FM-45	RF Coupling
C6	10	500	60-00105407	1469-00001	TCZ-10	5R5Q1	NP0K-100	MS-41	Fixed Trimmer
C7	65						N750L-650		Fixed Trimmer *
C8	.047	400		P488-047	DF-503	PTE4S5		4TM-S47	Decoupling
C9	.0047	400	45-3505-56	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Audio Coupling
C10	100	500	60-10105407	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	AF Amp. Plate
C11	.01	400	45-3505-41	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Tone Comp.
C12	.1	200	45-3505-30	P288-1		PTE4P1		68P17	Tone Comp.
C13	.25	100	61-0125	P185-25				68P19	Tone Comp.
C14	.0047	400	45-3505-56	P688-0047	D6-472	PTE6D1	GP2-333-472	6TM-D47	Audio Coupling
C15	.01	400	45-3505-41	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C16	.01	400	45-3505-41	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C17	.0068	1000	45-3505-91	P1088-0068		PTE16D7		MB-D68	Output Plate
C18	.0047	1600	30-4661-1	P1688-0047		PTE16D5		BB-D47	Buffer
C19	.5	100	61-0137	P185-5				68P20	Hash Filter
C20	330		62-133001001	SI330	D6-331	5W5T3	GP2K-331	19C14	Hash Filter

* Some models use 545 MMF in this application, Mfgrs. Part # 61-0149

CONTROLS

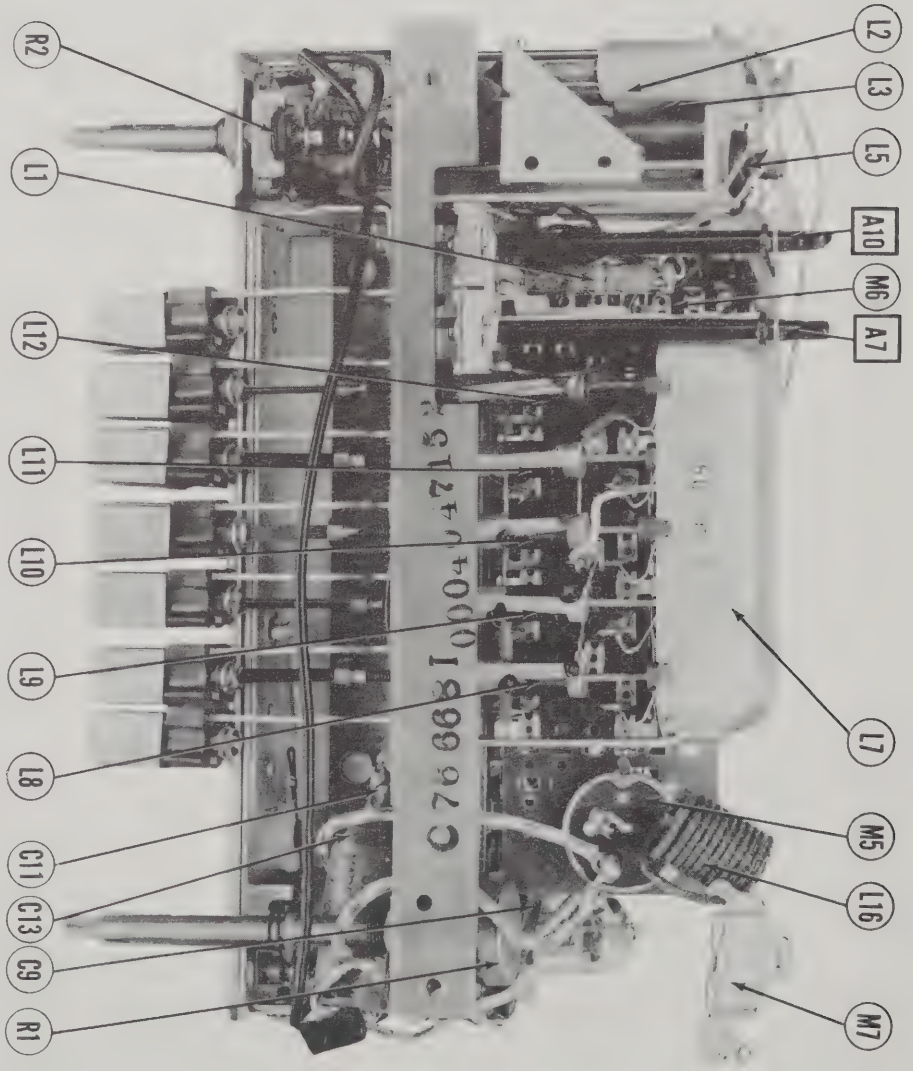
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	4Meg ϕ	½	33-5557-10	(Concentrikit)			Tone Control - Front
B	350KΩ	½		B12-141 #			Volume control - Rear
C	Shaft end			B13-132 #			Attach per instructions in Concentrikit
R2	15Ω	1	33-5568-1	E-187 #			Dial light dimmer control - Wire Wound

ϕ 2Meg from each end to center - - open at center
\# Additional parts to be used with Concentrikit

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	IRC PART No.	IDENTIFICATION CODES
R3	120Ω	½	66-1128340	BTS-120	RF Amp. Cathode - See Note
R4	330Ω	½	66-1338340	BTS-330	RF Amp. Cathode
R5	10KΩ	½	66-3108340	BTS-10K	RF Amp. Plate
R6	68KΩ	½	66-3688340	BTS-68K	AVC Network
R7	22KΩ	½	66-3228340	BTS-22K	Osc. Grid
R8	330Ω	½	66-1338340	BTS-330	IF Amp. Cathode
R9	27KΩ	1	66-3274340	BTA-27K	Screen Dropping
R10	1Meg	½	66-5108340	BTS-1Meg	AVC Network

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PHILCO PART No.	IRC PART No.	
R11	22KΩ	½	66-3228340	BTS-22K	Diode Filter
R12	180Ω	½	66-1188340	BTS-180	Feedback Network
R13	15Meg	½	66-6158340	BTS-15Meg	AF Amp. Grid
R14	220KΩ	½	66-4228340	BTS-220K	AF Amp. Plate
R15	15Meg	½	66-6158340	BTS-15Meg	Phase Inv. Grid
R16	220KΩ	½	66-4228340	BTS-220K	Phase Inv. Cathode
R17	220KΩ	½	66-4228340	BTS-220K	Phase Inv. Plate
R18	470KΩ	½	66-4478340	BTS-470K	Output Grid
R19	470KΩ	½	66-4478340	BTS-470K	Output Grid
R20	330Ω	1	66-1334340	BTA-330	Output Cathode
R21	2200Ω	½	66-2228340	BTS-2200	Feedback Network
R22	1000Ω	1	66-2104340	BTA-1000	Filter
R23	100Ω	1	66-1104340		Hash Suppressor
R24	100Ω	1	66-1104340		Hash Suppressor

Note Some models use 330Ω resistor in this application.

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	6.3VDC @ 4.4A	520VCT .077ADC			32-8313-1		P-3068	VT-4

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	3.7KΩ CT	3.2Ω	485Ω CT	.3Ω	32-8316		A-2900 ①		① Drill one new mounting hole.

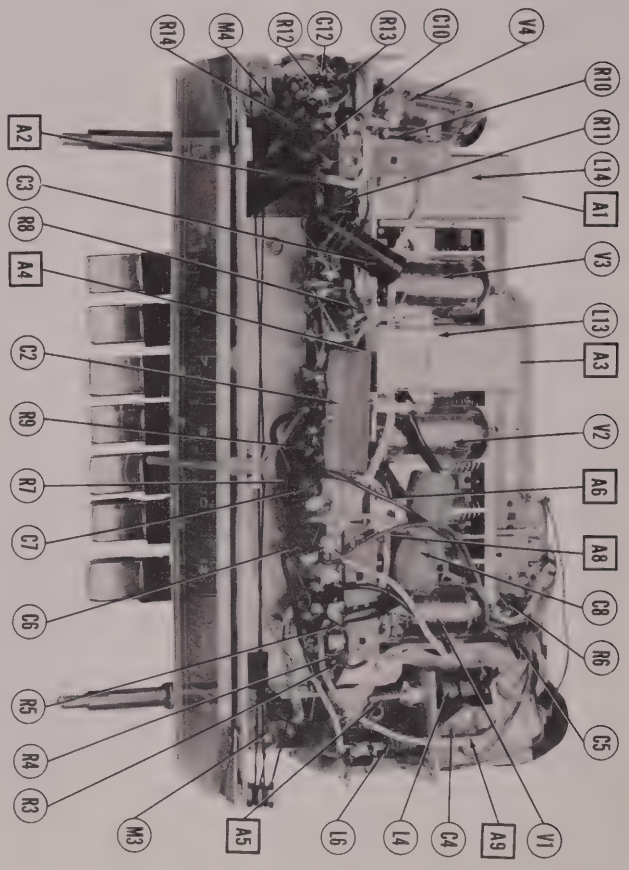
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			PHILCO PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.				
SP1	PM	3.2Ω	36-1631	ST810 Model P69-V	69A2	
	CONE DIA.	V. C. DIA.				
SP2	6"X9"	1"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	PHILCO PART No.	MEISSNER PART No.	
L1	Ant. Choke	3Ω		32-4422-24		
L2	Ant. Coil	12Ω				Part of manual tuning unit. Part # 76-6634
L3	RF Coil	13Ω				Part of manual tuning unit. Part # 76-6634
L4A	IF Trap Coil	32Ω		32-4510		
B	RF Coil	20Ω				
L5	Osc. Coil	3Ω				Part of manual tuning unit. Part # 76-6634
L6	Osc. Coil Shunt	5Ω		32-4110-5		Tapped @ .7Ω
L7	Ant. Coils			76-4602-1		Includes Pushbuttons 2 thru 6
L8	Osc. Coil	4.3Ω		32-4179-5		Pushbutton # 2
L9	Osc. Coil	4.9Ω		32-4179-6		Pushbutton # 3
L10	Osc. Coil	3.2Ω		32-4179-7		Pushbutton # 4
L11	Osc. Coil	2.5Ω		32-4179-8		Pushbutton # 5
L12	Osc. Coil	1.5Ω		32-4179-9		Pushbutton # 6
L13	1st. IF	16Ω	16Ω	32-4160A		
L14	2nd. IF	13Ω	13Ω	32-4240-A		
L15	Filament Choke	.5Ω		32-4170-2		
L16	Hash Choke	0Ω		32-1644		

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				PHILCO PART No.	CORNELL-DUBILIER PART No.	RADIART PART No.	
M1	INT	6.3	115	83-0025	5326	5326	

FUSES

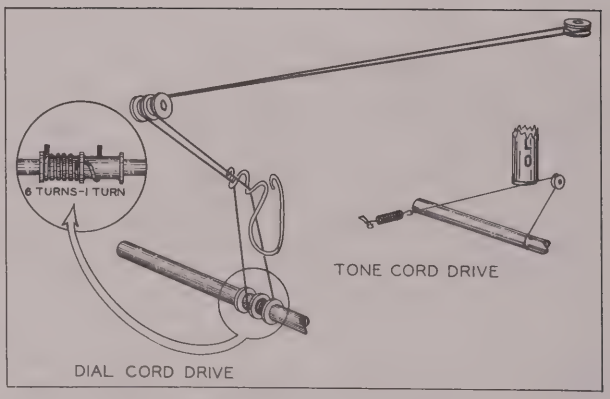
ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			PHILCO PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M2	SFE	14A	45-2559	41-3910-7	307014	155014A	

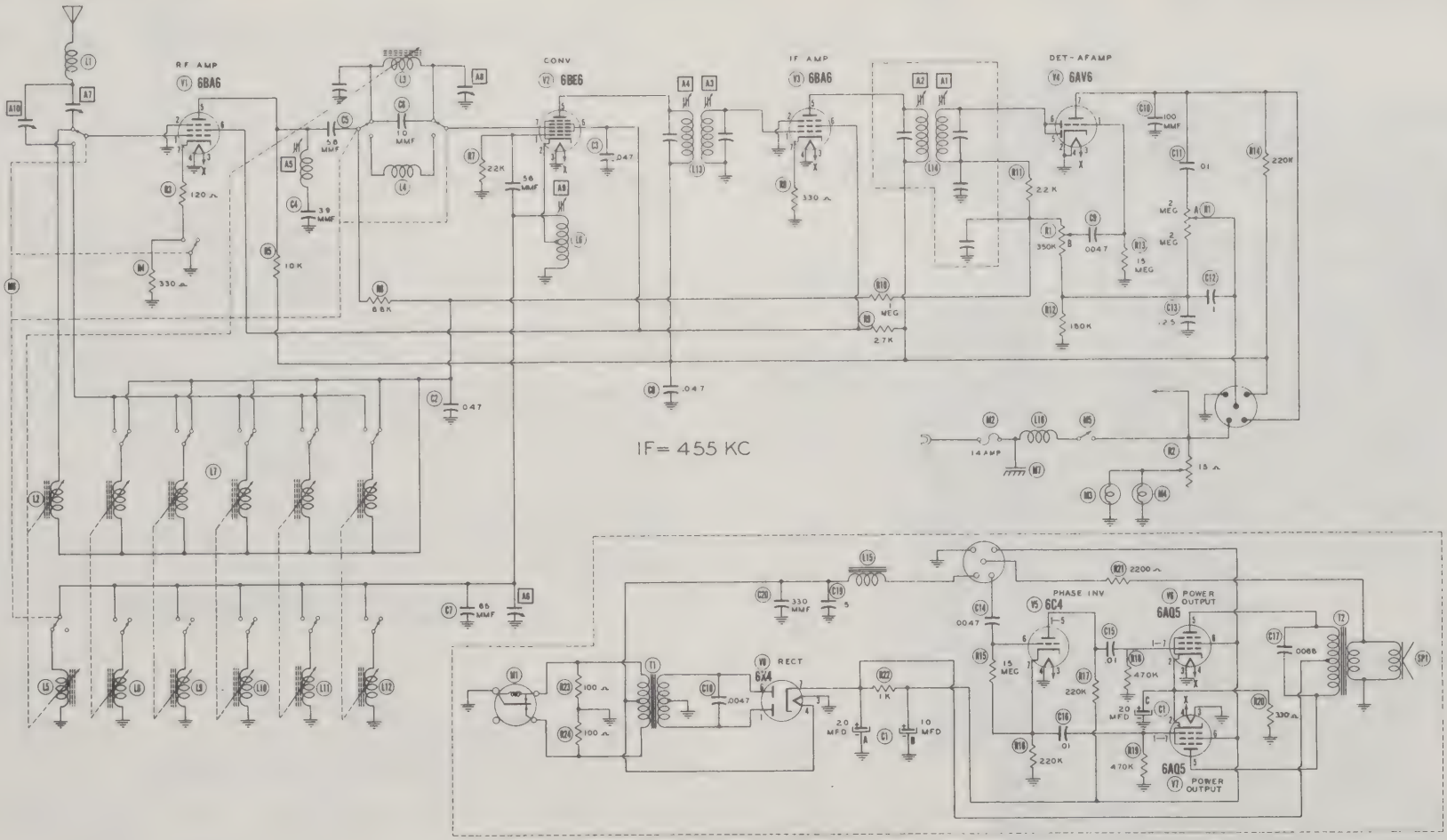
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					PHILCO PART No.		
M3	Bayonet	6-8	.250	Blue	34-2064		Type #44
M4	Bayonet	6-8	.250	Blue	34-2064		Type #44

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M5	Switch	67-0046-1	"Off" Switch
M6	Switch	42-1956	Pushbutton





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	2VDC	0V	6.3VDC	0V	205VDC	60VDC	1.4VDC
V 2	6BE6	1.2.8VDC	0V	6.3VDC	0V	230VDC	60VDC	2VDC
V 3	6BA6	0V	0V	6.3VDC	0V	230VDC	60VDC	1.4VDC
V 4	6AV6	.5VDC	0V	0V	6.3VDC	1VDC	.1VDC	90VDC
V 5	6C4	125VDC	0V	0V	6.3VDC	125VDC	2VDC	100VDC
V 6	6AQ5	0V	15VDC	0V	6.3VDC	245VDC	230VDC	0V
V 7	6AQ5	0V	15VDC	6.3VDC	0V	245VDC	230VDC	0V
V 8	6X4	275VAC	0V	0V	6.3VDC	0V	275VAC	250VDC

† TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	1.5Meg	0Ω	1Ω	0Ω	110KΩ	127KΩ	430Ω
V 2	6BE6	22KΩ	7Ω	1Ω	0Ω	1KΩ	127KΩ	1.5Meg
V 3	6BA6	12Ω	0Ω	1Ω	0Ω	1KΩ	127KΩ	330Ω
V 4	6AV6	1.5Meg	0Ω	0Ω	1Ω	360KΩ	360KΩ	1320KΩ
V 5	6C4	1220KΩ	Inf.	0Ω	1Ω	1220KΩ	1.5Meg	220KΩ
V 6	6AQ5	470KΩ	330Ω	0Ω	1Ω	1260Ω	1KΩ	470KΩ
V 7	6AQ5	470KΩ	330Ω	1Ω	0Ω	1230Ω	1KΩ	470KΩ
V 8	6X4	450Ω	Inf.	0Ω	1Ω	Inf.	400Ω	80KΩ

† MEASURED FROM PIN 7 OF V8

ALL MEASUREMENTS TAKEN IN MANUAL TUNING POSITION

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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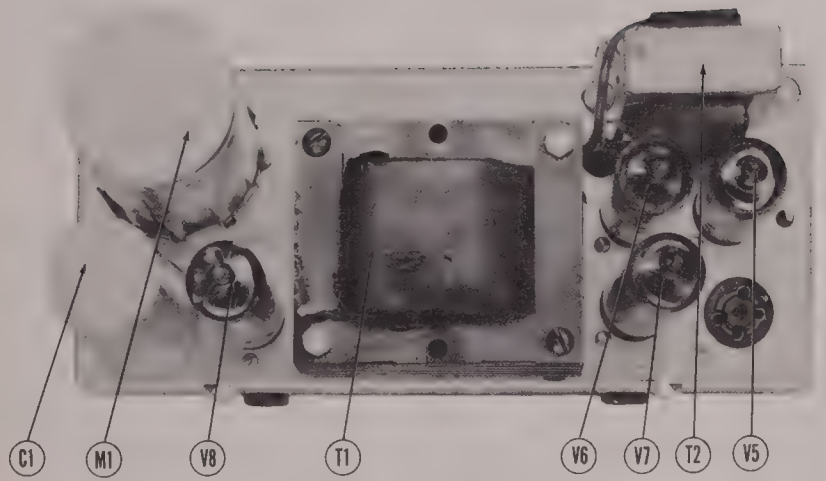
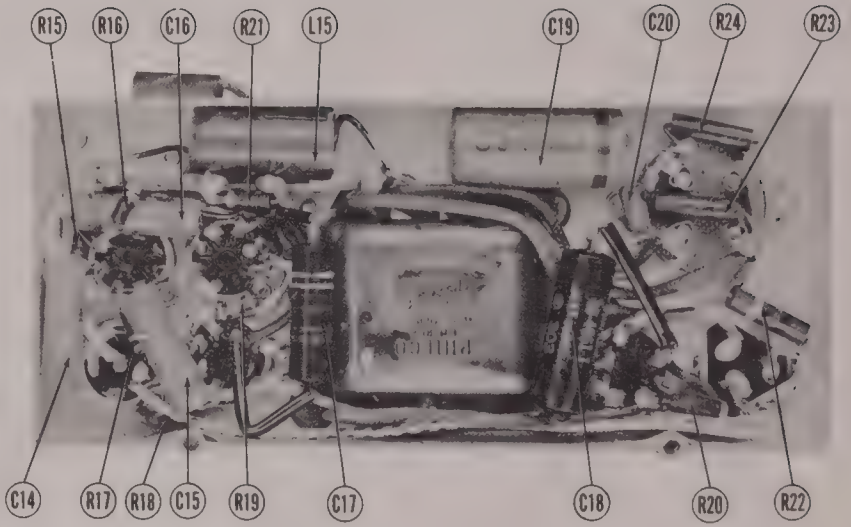
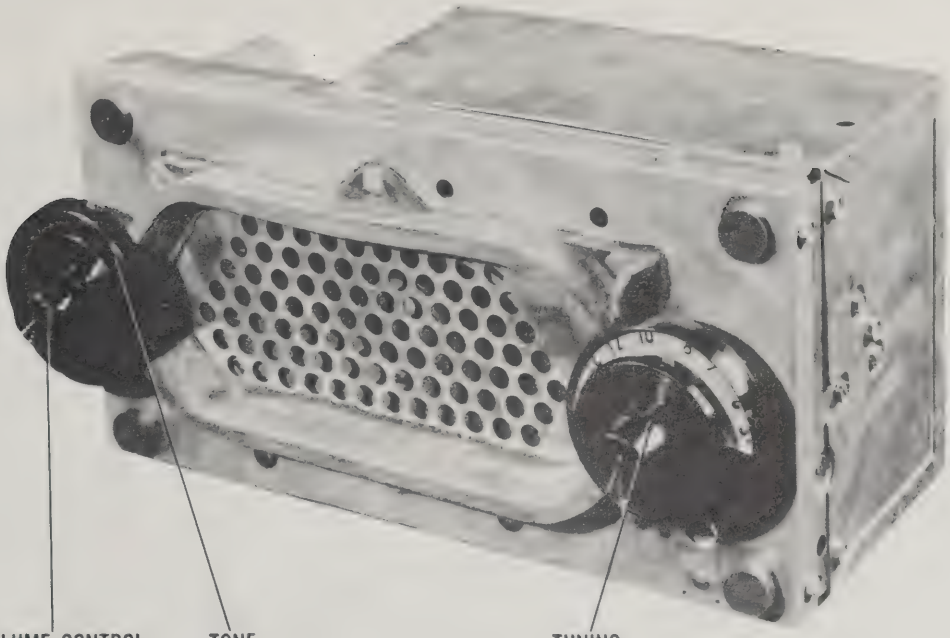
1 - DC Voltage measurements are at 20,000 ohms per volt: AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.


C1
M1
V8
T1
V6
V7
T2
V5


R15
R16
C16
R21
L15
C19
C20
R24
R23
C14
R17
R18
C15
R19
C17
C18
R20
R22

MOTOROLA
MODEL NH1C



MOTOROLA
MODEL NH1C

TRADE NAME	Motorola, Model NH1C
MANUFACTURER	Motorola Inc., 4545 Augusta Blvd., Chicago, Illinois
TYPE SET	Battery Operated Custom-Built 1951 Nash Rambler Superheterodyne Receiver
TUBES (FIVE)	Types 6BE6 Converter, 6BA6 IF Amp., 6AV6 DET.-AVC-AF, 6AS5 Power Output, 6X4 Rectifier
POWER SUPPLY	6 Volt Storage Battery — Rating 4.6 Amp. @ 6.3 Volts DC
TUNING RANGE--BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS--READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD.	High side to pin 7 (Grid) of 6BE6 (V1). Low side to chassis.	455KC	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	Fig. 1	High side thru dummy to antenna receptacle. Low side to chassis.	1605KC	"	"	A5	"
3.	"	"	1400KC	Tune for max. output.	"	A6	"
4.	"	"	600KC	600KC	"	A7	Rock tuning gang while adjusting A7 for maximum output. Repeat steps 3 and 4 until no further improvement can be made. A6 should be adjusted last.

After set is installed fully extend antenna and tune in a weak station near 1400KC. Adjust A6 for maximum volume.

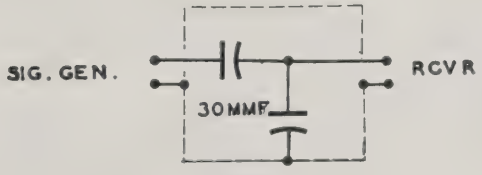


FIG. 1

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

MOTOROLA MODEL NH1C

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	6BE6	6BE6	7CH	
V2	IF Amplifier	6BA6	6BA6	7BK	
V3	Det.-AVC-AF	6AV6	6AV6	7BT	
V4	Power Output	6AS5	6AS5	7CV	
V5	Rectifier	6X4	6X4	5RS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	20	250	23A500059	AF43F4A		UP215S25C		TVL-3565	■ Filter
B	10	250							▲ Filter
C	10	25							Output Cathode
C2	.05	100	8R13514	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C3	.05	200	8R23146	P288-05	DF-503	PTE4S5		2TM-S5	Decoupling
C4	.01	100	8R472754	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C5	.01	200	8R23053	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C6	250	100	21R6543	1468-00025	D6-251	5W5T25	GP2K-251	1FM-325	Output Grid
C7	.006	400	8K71910	P488-006		PTE6D6	GP2-333-602	6TM-D6	Tone Comp.
C8	.02	100	8R51209	P488-02	DF-203	PTE4S2		2TM-S2	Tone Comp.
C9	.01	400	8R23690	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Output Plate
C10	.25	100	8R4283	P488-25		GT2P25		2TM-P25	Line Filter
C11	.25	100	8R4283	P488-25		GT2P25		2TM-P25	Line Filter
C12	.03	600	8R592154	P688-03		PTE6S3		6TM-S3	Buffer Cap.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	1/2	18B501837	(Concentrikit B11-137 ⌀			Tone Control - Front
B	250KΩ	1/2		B18-130X ⌀)			Volume control - Tapped ⓐ 75KΩ - Rear
C	Shaft end			E-187 ⌀			Attach per instructions in Concentrikit
D	Switch			76-1 ⌀			Attach per instructions in Concentrikit

⌀ Additional parts to be used with Concentrikit.

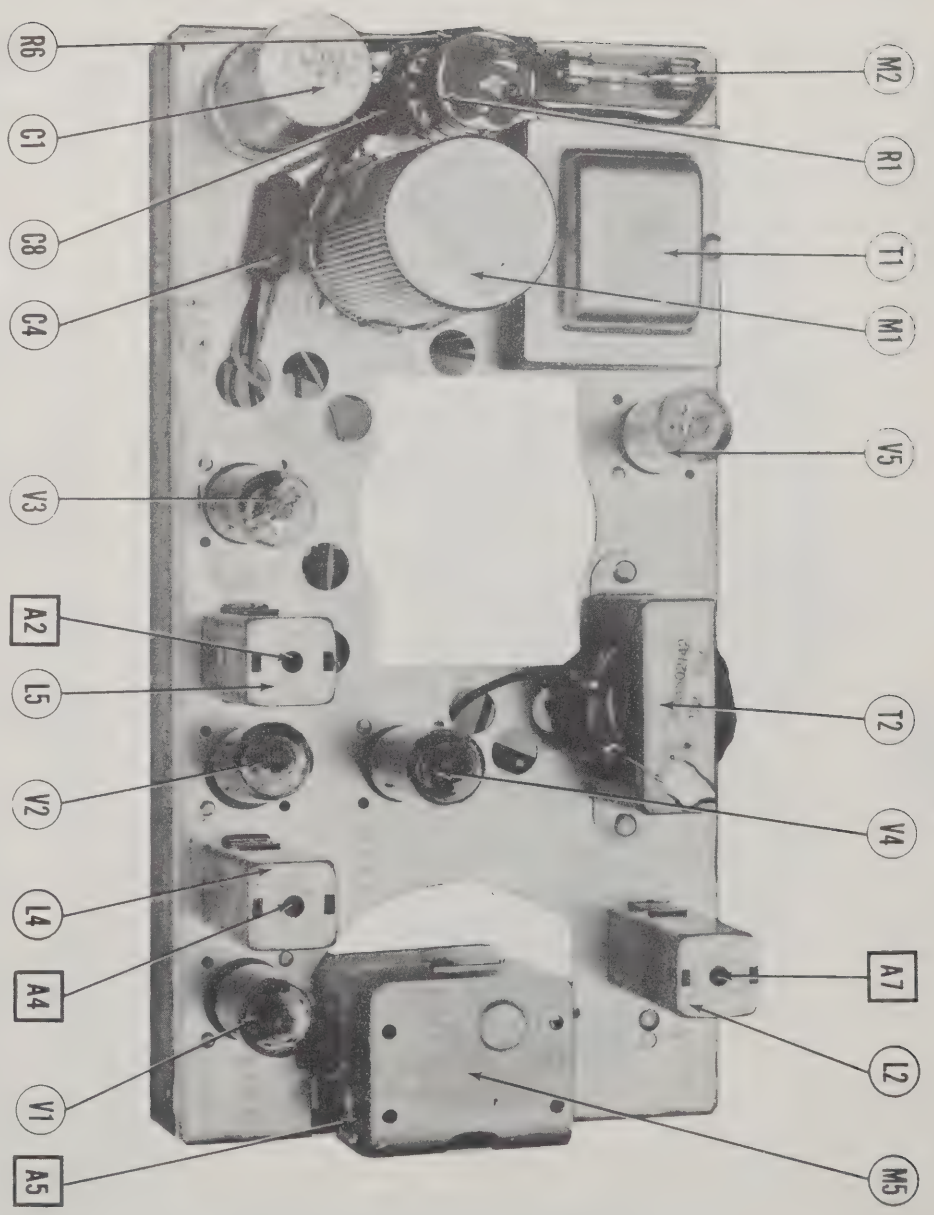
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	IRC PART No.	IDENTIFICATION CODES
R2	33KΩ	1/2	6R6012	BTS-33K	Osc. Grid
R3	82Ω	1/2	6R2035	BTS-82	IF Amp. Cathode
R4	6800Ω	1/2	6R6428	BTS-6800	Screen Dropping
R5	1Meg	1/2	6R6004	BTS-1Meg	AVC Network
R6	12KΩ	1/2	6R6394	BTS-12K	Tone Compensation
R7	6.8Meg	1/2	6R3987	BTS-6.8Meg	AF Amp. Grid
R8	220KΩ	1/2	6R6015	BTS-220K	AF Amp. Plate
R9	470KΩ	1/2	6R6032	BTS-470K	Output Grid
R10	330Ω	1	6R6254	BTA-330	Output Cathode
R11	3900Ω	1	6R488313	BTA-3900	Filter
R12	56	1/2	6R5614		Hash Suppressor
R13	56	1/2	6R5614		Hash Suppressor

TRANSFORMER (VIBRATOR)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	6.3VDC ⓐ 2A	380VCT .040ADC			25C591533			

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	5KΩ	3Ω	640Ω	.5Ω	25B502142	A-3877 ①	A-3019	R0-9 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			MOTOROLA PART No.	VIKING PART No.	QUAM PART No	
SP1	FIELD	V. C. IMP.	50C501823	46J6	46A1	
	PM	3Ω				
	CONE DIA.	V. C. DIA.				
SP2	4"X6"	9/16				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	MOTOROLA PART No.	MEISSNER PART No.	
L1	Ant. Hash Choke	2.3Ω		24K592197		2.7 Microhenries
L2	Ant. Coil	4Ω		24B591628		
L3	Osc. Coil	9Ω	Tap 8Ω	24A591629		
L4	1st. IF	22Ω	22Ω	24K591556		
L5	2nd. IF	22Ω	22Ω	24K591555		
L6	Hash Choke	.1Ω		24A472535		

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FRE-QUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				MOTOROLA PART No.	CORNELL-DUBILIER PART No.	RADIART PART No.	
M1	INT	6.3V	115%	48B3333	5342	5342	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			MOTOROLA PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M2	3AG	10A	65A10266		311010	357001	

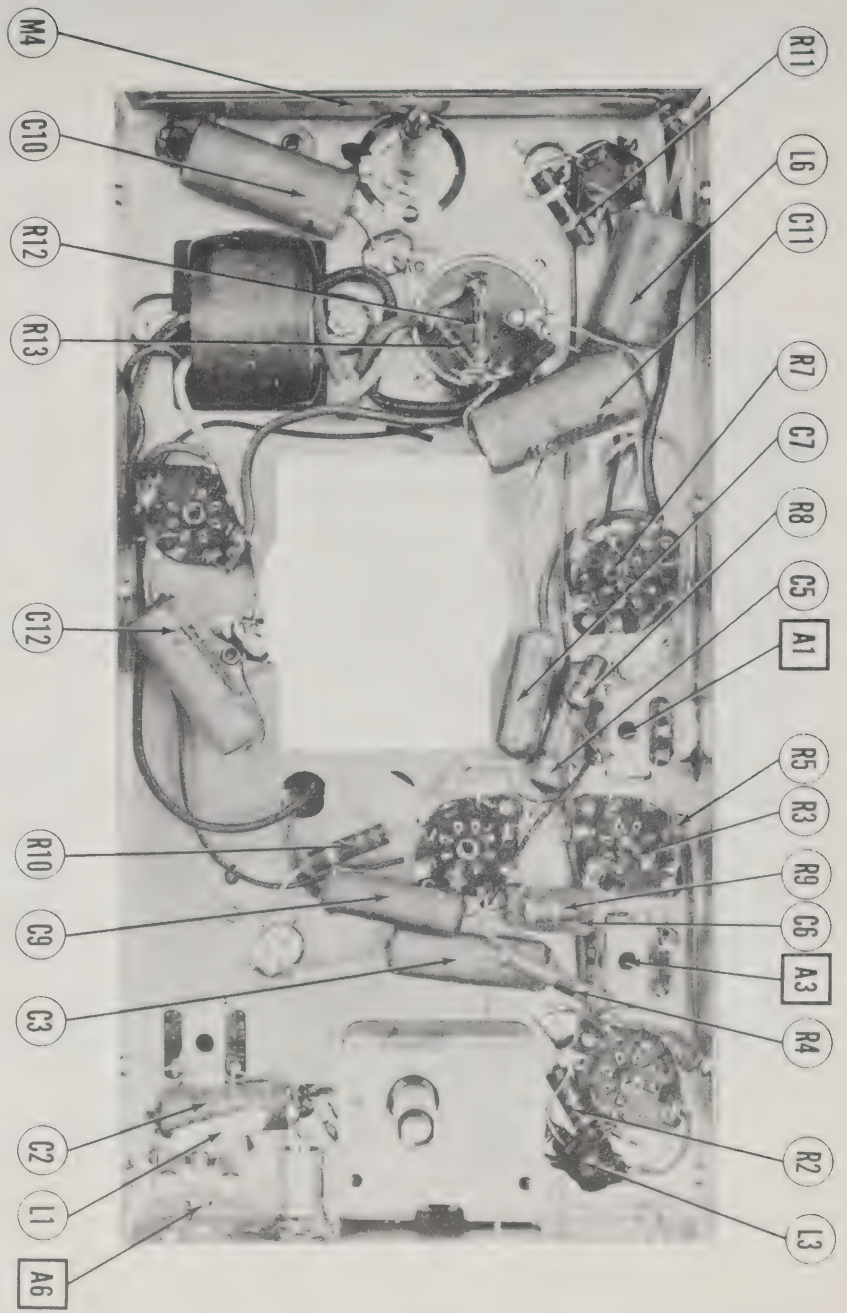
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					MOTOROLA PART No.		
M3	Bayonet	6-8	.25	Blue	65X10867		Type #44

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M4	Spark Plate	1A591512	
M5	2 Gang Var. Cap.	19B501790	(19-489MMF, 36-192MMF)
A6	Trimmer	20K481527	Ant. Adj.
	Dial Pointer	52A502203	

CHASSIS—BOTTOM VIEW

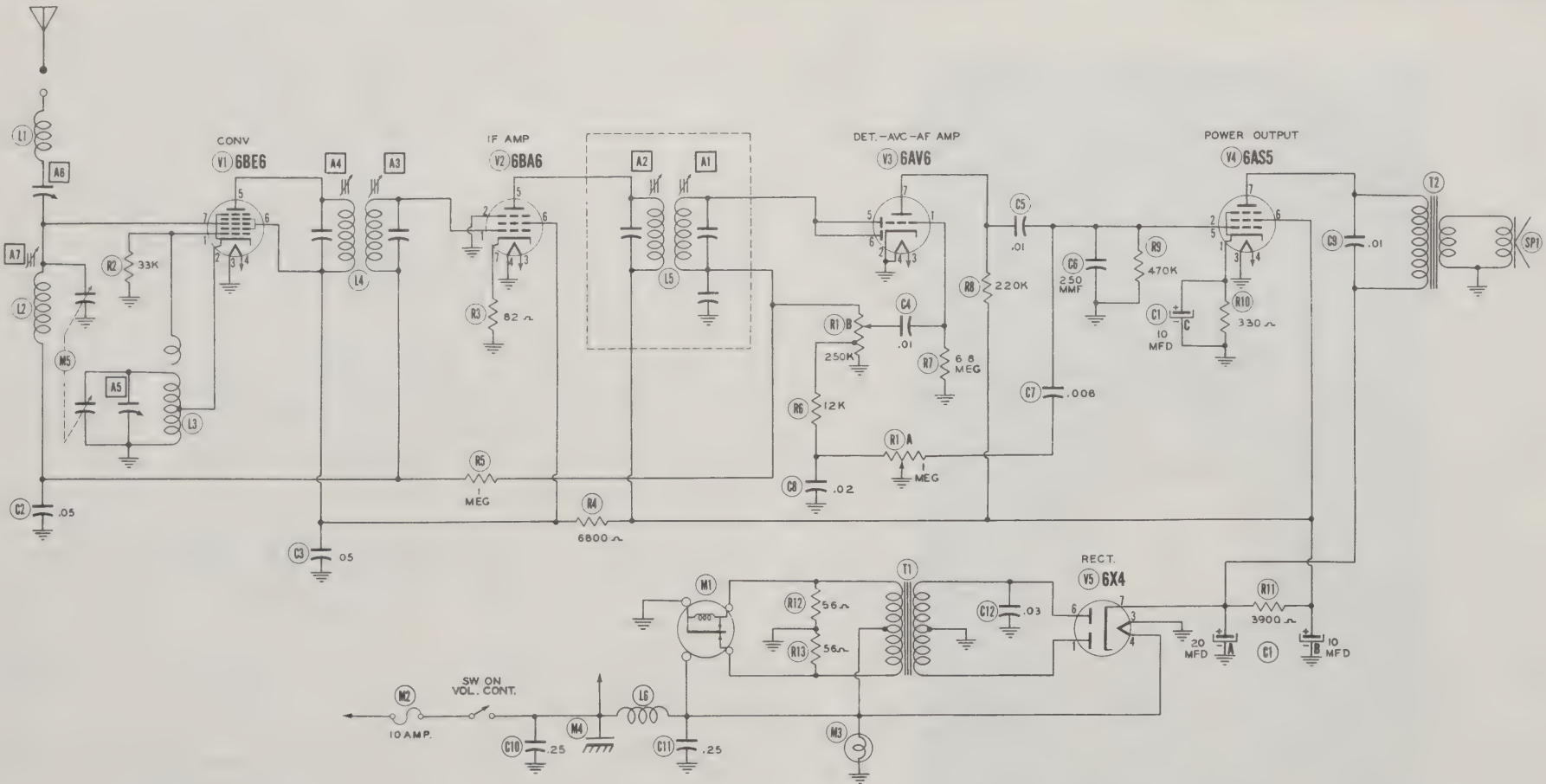


SET 139

FOLDER 9

MOTOROLA MODEL NHIC

MOTOROLA MODEL NHIC



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VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BE6	§-5.8VDC	0V	0V	6.1VDC	60VDC	60VDC	-.3VDC
V 2	6BA6	0V	0V	6.1VDC	0V	100VDC	60VDC	.5VDC
V 3	6AV6	- 3VDC	0V	6.1VDC	0V	-.3VDC	-.3VDC	60VDC
V 4	6AS5	8.4VDC	0V	0V	6.1VDC	0V	100VDC	135VDC
V 5	6X4	195VAC	0V	0V	6VDC	0V	195VAC	150VDC

§ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BE6	33KΩ	.8Ω	0Ω	.6Ω	†10KΩ	†10KΩ	1.2Meg
V 2	6BA6	1.2Meg	0Ω	.6Ω	0Ω	†3.9KΩ	†10KΩ	82Ω
V 3	6AV6	6.8Meg	0Ω	.6Ω	0Ω	225KΩ 160KΩ	225KΩ 160KΩ	†223KΩ
V 4	6AS5	330Ω	470KΩ	0Ω	.6Ω	470KΩ	†3.9KΩ	†640Ω
V 5	6X4	350Ω	Inf.	0Ω	.6Ω	Inf.	350Ω	160KΩ

† MEASURED FROM PIN 7 OF V5

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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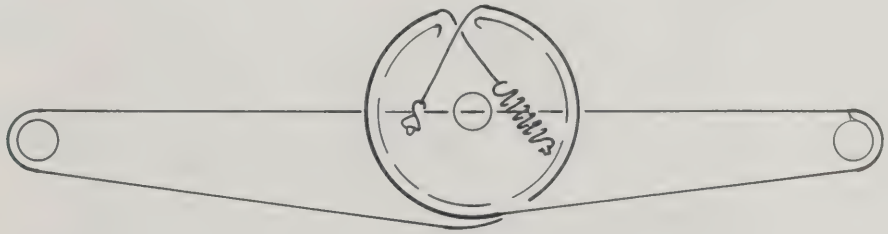
1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

NATIONAL
MODEL NC-125

NATIONAL MODEL NC-125

TRADE NAME	National, Model NC-125
MANUFACTURER	National Co., Inc., Malden, Mass.
TYPE SET	AC Operated Multi-Band Communications Type Superheterodyne Receiver
TUBES (ELEVEN)	Types 6SG7 RF Amp., 6SB7-Y Converter, 6SG7 1st IF Amp., 6SG7 2nd IF Amp., 6H6 Det.-AVC-Noise Limiter, 6SL7GT Phase Inverter, 6SL7GT 1st AF Amp., 6SL7GT 2nd AF-CW Osc., 6V6GT Power Output, 0D3/VR-150 Voltage Regulator, 5Y3GT Rectifier
POWER SUPPLY	110-120 Volts AC
TUNING RANGE	Band A-12-35MC, Band B-4.4-12MC, Band C - 1.55-4.4MC, Band D -.56-1.55MC
RATING	.79 Amp. @ 117 Volts AC

TUNING GANG FULLY CLOSED



DIAL CORD DRIVE

MAIN TUNING -- FOR BANDSPREAD SEE PAGE SIX.

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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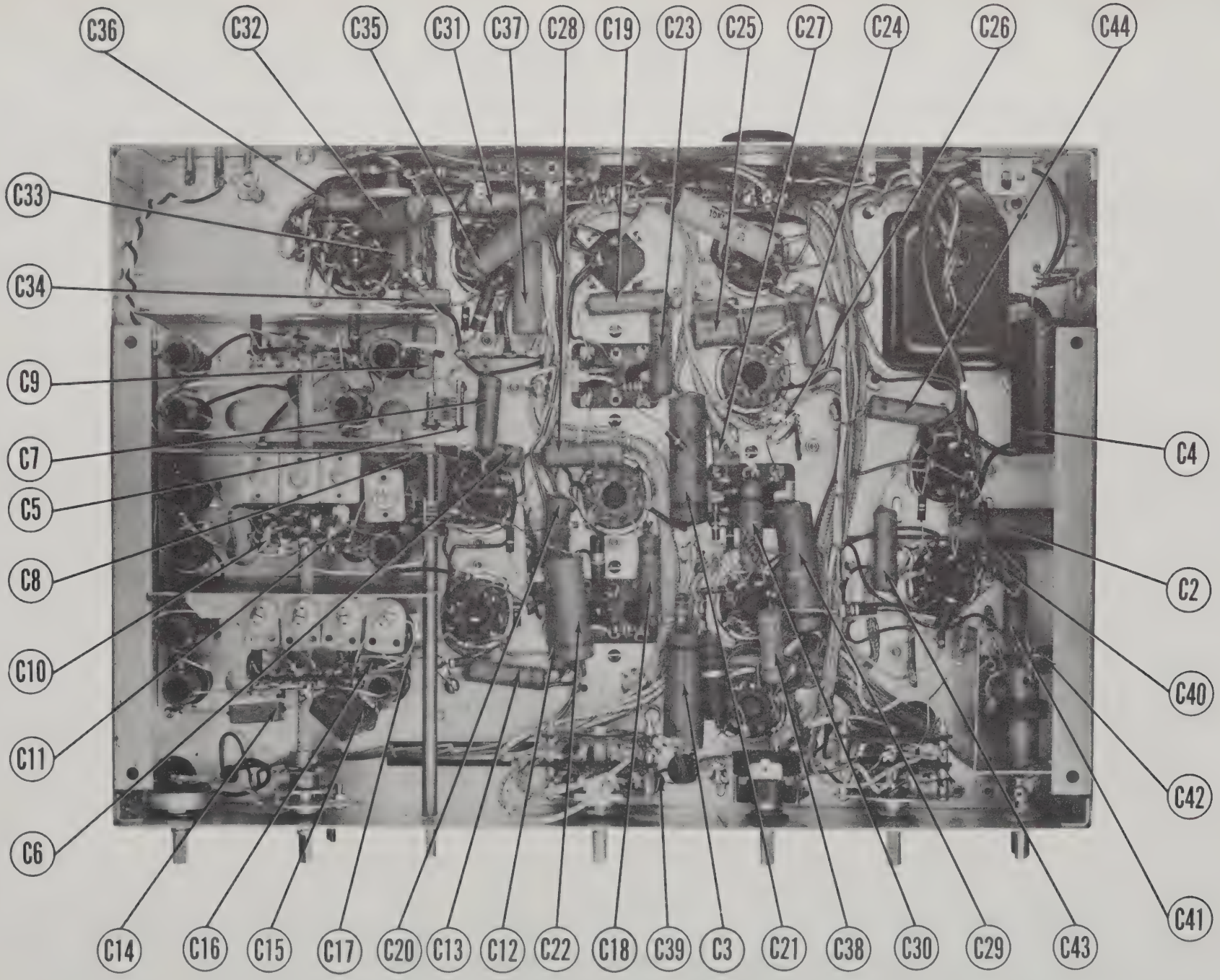
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C43

NATIONAL
MODEL NC-125

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

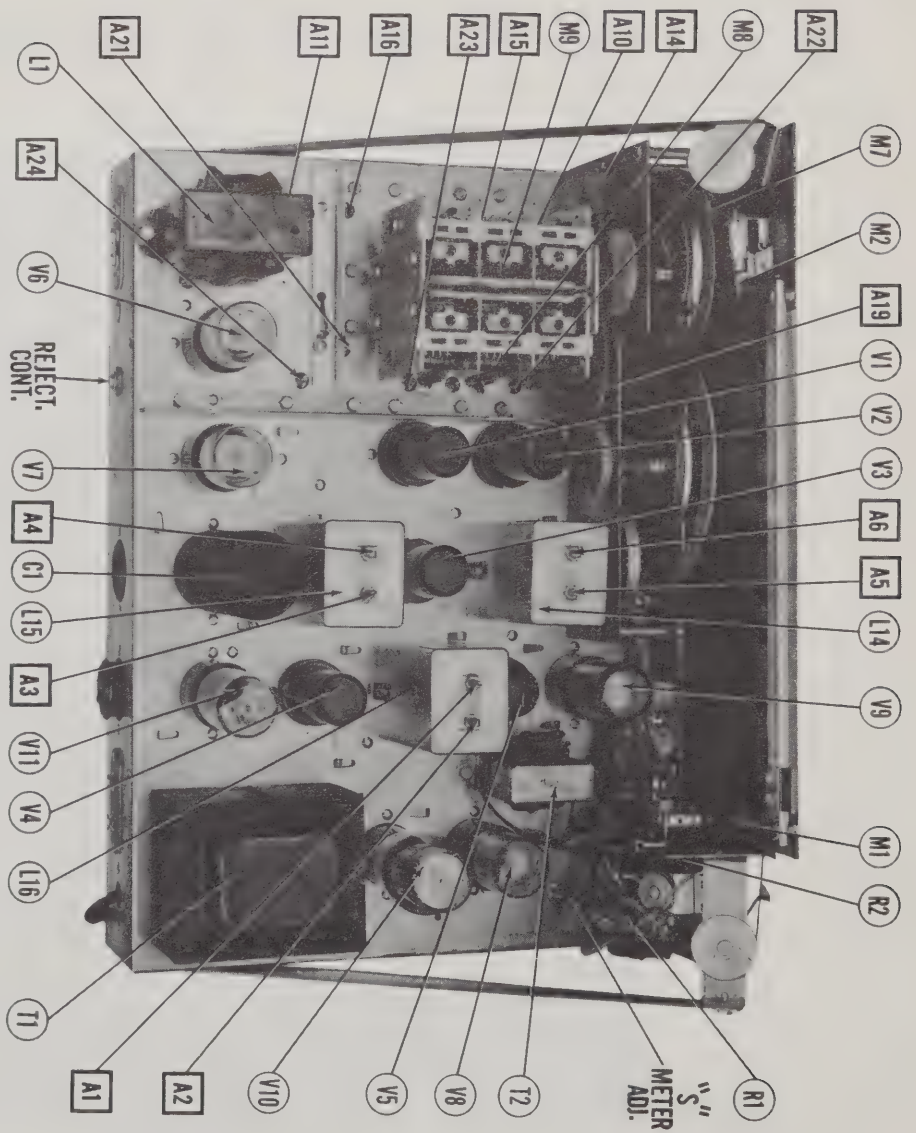
ITEM No.	USE	REPLACEMENT DATA: NATIONAL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6SG7	6SG7	8BK	
V2	Converter	6SB7	6SB7	8R	
V3	1st. IF Amplifier	6SG7	6SG7	8BK	
V4	2nd. IF Amplifier	6SG7	6SG7	8BK	
V5	Detector-AVC-Noise Limiter	6H6	6H6	7Q	
V6	Phase Inverter	6SL7GT	6SL7GT	8BD	
V7	1st. AF Amplifier	6SL7GT	6SL7GT	8BD	
V8	2nd. AF Amplifier -CW Oscillator	6SL7GT	6SL7GT	8BD	
V9	Audio Output	6V6GT	6V6GT	7AC	
V10	Voltage Regulator	0D3/VR150	0D3/VR150	4AJ	
V11	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: NATIONAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	K945-1	AF88J		UP4445		TVL-2746	▪ Filter
B	40	450							■ Filter
C2	10	50	E338-9	PRS50/10		BR-105		TVA-1304	AF Amp. Cathode
C3	25	50	E338-4	PRS50/25		BR255A		TVA-1306	Audio Output Cathode
C4	20	450	E338-3	PRS450/20		BR2045A		TVA-1709	Decoupling
C5	100		J665-32	SI100	D6-101	5W5T1	GP1K-101	19C11	RF Coupling
C6	.01	400	D827-5	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	RF Amp. Screen
C7	.01	400	D827-5	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	RF Amp. Cathode
C8	1000	500	J665-71	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	RF Amp. Plate
C9	10000	500		1467-01	D6-103	1D3S1	GP2-333-103	1FM-11	AVC Filter
C10	15		D825D-405		TCZ-15		NP0K-150		RF Coupling A Band
C11	5		D825D-401	SI5NP0			NP0K-050		RF Coupling B Band
C12	.01	400	D827-5	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Conv. Plate Dec.
C13	.01	400	D827-5	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Osc. Plate Dec.
C14	4300	500	J666-37						Fixed Padder
C15	1300	500	J666-18						Fixed Padder
C16	510	500	H500-5						Fixed Padder
C17	100	500	J665-32	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	Osc. Grid Cap.
C18	.01	400	D827-5	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	AVC Filter
C19	.01	400	D827-5	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	1st. IF Plate Dec.
C20	.01	400	D827-5	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	1st. IF Screen
C21	.1	600	D827-12	P688-1	DF-104	PTE6P1		6TM-P1	1st. IF Cathode
C22	.1	400	D827-12	P488-1	DF-104	PTE4P1		4TM-P1	Decoupling
C23	.01	400	D827-5	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	AVC Filter
C24	.01	400	D827-5	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	2nd. IF Screen
C25	.1	400	D827-12	P488-1	DF-104	PTE4P1		4TM-P1	2nd. IF Cathode
C26	10		D825D-402	SI10N750	TCN-10		N750K-100		IF Coupling
C72	100	500	J665-32	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	RF Bypass
C28	.01	400	D827-5	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	AVC Filter
C29	.1	600	D827-12	P688-1	D6-104	PTE6P1		6TM-P1	RF Bypass
C30	.01	400	D827-5	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C31	.05	400	D827-1	P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C32	.05	400	D827-1	P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C33	1000	500	J666-14	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Audio Coupling
C34	1000	500	J666-14	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Audio Coupling
C35	.05	400	D827-1	P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C36	.05	400	D827-1	P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C37	.05	400	D827-1	P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C38	.001	600	D827-32	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Audio Coupling
C39	.02	600	D827-44	P688-02	DF-203	PTE6S2		6TM-S2	Tone Comp.
C40	270	500	J665-47	SI270	D6-271	5R5T25	GP2K-271	19C31	CW Osc. Grid
C41	.01	400	D827-5	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	CW Osc. Feedback
C42	220	500	H500-21	SI220	D6-221	5R5T2	GP2K-221	19C13	Fixed Trimmer
C43	.01	400	D827-5	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Decoupling
C44	.01	400	D827-5	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA NATIONAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	2.5Meg	½	M879-2	Q13-140			Frequency Control - Dual
B	2.5Meg	½		M13-140			
R2A	500KΩ	½	J533-9	Q13-133	AM-60-Z	B-60	Boost Control
B	Shaft		Not req.	Not req.	FS-3	Not res.	Attach to R2A per instructions
R3A	500KΩ	½	K347-1	Q13-133	AM-60-Z	B-60-S	AF Gain Control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R3A per instructions
C	Switch		Not req.	76-1	SW-A	Not req.	Attach to R3A per instructions
R4	10KΩ	1	K349-1				RF Gain Control - Wire Wound
R5A	500KΩ	½	J533-7	Q13-133	AM-60-Z	AN-60	Reject Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R5A per instructions
R6	1000Ω	1	D831-2	WK-1000	43-1000 ϕ		"S" Meter Adjustment Control - Wire Woun

ϕ Fashion shaft to duplicate original.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA NATIONAL PART No.	IRC PART No.	IDENTIFICATION CODES
R7	1Meg	½	J569-61	BTS-1Meg	AVC Network
R8	150KΩ	½	J569-51	BTS-150K	RF Amp. Grid
R9	220Ω	½	J569-17	BTS-220	RF Amp. Cathode
R10	1000Ω	½	J569-25	BTS-1000	RF Amp. Screen
R11	4700Ω	½	J569-33	BTS-4700	RF Amp. Plate Decoupling
R12	150KΩ	1	J571-51	BTA-150K	Voltage Divider
R13	33Ω	½	J569-7		Parasitic Suppressor
R14	22KΩ	½	J569-41	BTS-22K	Osc. Grid
R15	3900Ω	½	J569-32	BTS-3900	Osc. Anode
R16	1000Ω	½	J569-25	BTS-1000	Conv. Plate Decoupling
R17	470KΩ	½	J569-57	BTS-470K	AVC Network
R18	1200Ω	½		BTS-1200	1st. IF Amp. Cathode - See Note
R19	150KΩ	1	J571-51	BTA-150K	1st. IF Amp. Screen
R20	1000Ω	½	J569-25	BTS-1000	1st. IF Amp. Plate Decoupling
R21	470KΩ	½	J569-57	BTS-470K	AVC Network
R22	220Ω	½	J569-17	BTS-220	2nd. IF Amp. Cathode
R23	2200Ω	½	J569-29	BTS-2200	2nd. IF Amp. Screen
R24	2.2Meg	½	J569-65	BTS-2.2Meg	AVC Network
R25	100KΩ	½	J569-49	BTS-100K	AVC Network
R26	1Meg	½	J569-61	BTS-1Meg	Noise Limiter Network
R27	1Meg	½	J569-61	BTS-1Meg	Noist Limiter Network
R28	33KΩ	½	J569-43	BTS-33K	Noise Limiter Load
R29	180KΩ	½	J569-52	BTS-180K	Noise Limiter Load
R30	330KΩ	½	J569-55	BTS-330K	Tone Compensation
R31	33KΩ	½	J569-43	BTS-33K	Tone Compensation
R32	22KΩ	½	J569-41	BTS-22K	CW Osc. Grid
R33	10KΩ	½	J569-37	BTS-10K	CW Osc. Plate
R34	330Ω	½	J569-19	BTS-330	Series "S" Meter
R35	1Meg	½	J569-61	BTS-1Meg	Phase Inv. Grid
R36	1800Ω	½	*	BTS-1800	Phase Inv. Cathode
R37	1800Ω	½	*	BTS-1800	Phase Inv. Plate
R38	10KΩ	½	J569-37	BTS-10K	Phase Inv. Grid
R39	3900Ω	½	†	BTS-3900	Phase Inv. Cathode
R40	3900Ω	½	†	BTS-3900	Phase Inv. Plate
R41	10KΩ	½	J569-37	BTS-10K	1st. AF Amp. Grid
R42	5600Ω	½	J569-34	BTS-5600	1st. AF Amp. Cathode
R43	22KΩ	½	J569-41	BTS-22K	1st. AF Amp. Plate
R44	1800Ω	½	J569-28	BTS-1800	1st. AF Amp. Cathode
R45	3900Ω	½	J569-32	BTS-3900	1st. AF Amp. Cathode
R46	22KΩ	1	J569-41	BTA-22K	1st. AF Amp. Plate
R47	22KΩ	½	J569-41	BTS-22K	Decoupling
R48	2700Ω	½	J569-30	BTS-2700	2nd. AF Amp. Cathode
R49	100KΩ	½	J569-49	BTS-100K	2nd. AF Amp. Plate
R50	470KΩ	½	J569-57	BTS-470K	Output Grid
R51	330Ω	2	J572-19	BTB-330	Output Cathode
R52	47KΩ	½	J569-45	BTS-47K	Output Transformer Shunt
R53	3900Ω	10	E959-12	1 3/4A-400	Filter - Wire Wound
R54	4.3Ω	½	K098-48	BW-½-4.3	Diode Filament - Wire Wound

Note The value of this resistor may vary from 330Ω to 2200Ω.
* Must be paired within 2% of each other when replacing.
† Must be paired within 2% of each other when replacing.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA NATIONAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117 VAC @ .79A	600VAC .112ADC	5VAC @ 2A	6.3VAC @ 3A	K316-2		P-2952	PH-120 ②

② Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA NATIONAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T2	5.5KΩ	3.2Ω	610Ω	.7Ω	K313-1	A-3849 ①	A-3019 ①	R0-9 ①	① Drill one new mounting hole.

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ∿)	REPLACEMENT DATA NATIONAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.112A	260Ω	8 Henries	K317-1	C-2303	C-2995 ①	R-8120 ①	

① Drill one new mounting hole.

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA NATIONAL PART No.	MEISSNER PART No.	
L2	Ant. Coil	.1Ω	.1Ω	SA-4863		Band "A"
L3	Ant. Coil	.9Ω	.1Ω	SA-4867		Band "B"
L4	Ant. Coil	1.2Ω	1.6Ω	SA-4865		Band "C"
L5	Ant. Coil	2.8Ω	4.5Ω	SA-4866		Band "D"
L6	RF Coil	2.5Ω	.1Ω	SA-4870		Band "A"
L7	RF Coil	5Ω	.1Ω	SA-4872		Band "B"
L8	RF Coil	28Ω	1.6Ω	SA-4873		Band "C"
L9	RF Coil	.5Ω	4.2Ω	SA-4874		Band "D"
L10	Osc. Coil	.18Ω		SA-4866		Band "A" Tapp @ .1Ω
L11	Osc. Coil	.19Ω		SA-4868		Band "B" Tapp @ .1Ω
L12	Osc. Coil	.6Ω		SA-4658		Band "C" Tapp @ .3Ω
L13	Osc. Coil	2.3Ω		SA-4871		Band "D" Tapp @ .1Ω
L14	1st. IF	2.5Ω	1.3Ω	SA-4875		
L15	2nd. IF	2.2Ω	2.4Ω	SA-4533		
L16	3rd. IF	2.2Ω	2.4Ω	SA-4533		
L18	Pitch Coil	2Ω				Tapped @ .1Ω

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA NATIONAL PART No.		NOTES
M1	Bayonet	6-8	.15	Brown	F136-11		Type #47
M2	Bayonet	6-8	.15	Brown	F136-11		Type #47
M3	Bayonet	6-8	.15	Brown	F136-11		Type #47

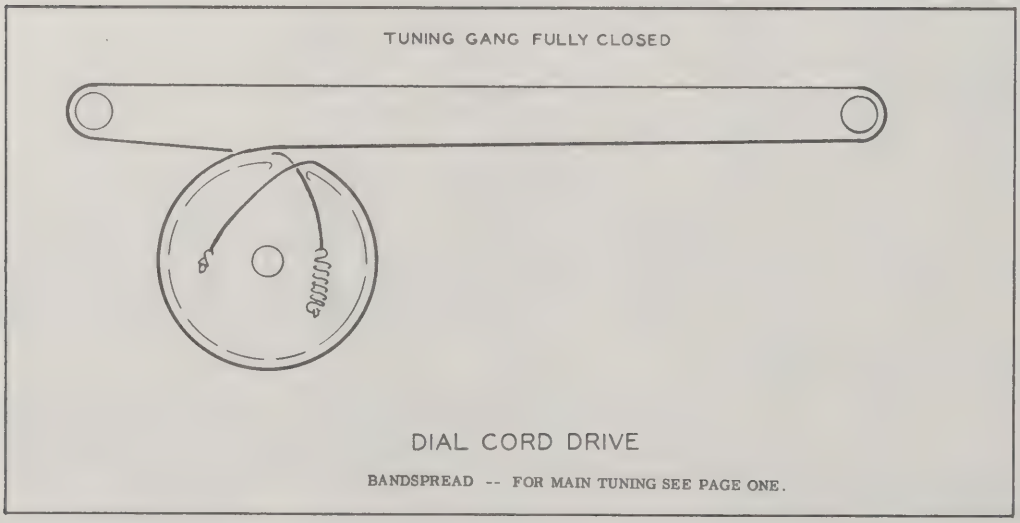
MISCELLANEOUS

ITEM No.	PART NAME	NATIONAL PART No.	NOTES
M4	Switch	K752-1	Band
M5	Switch	SA:7621	Tone
M6	Switch	SA:7622	AVC-ANL
M7	Switch	E230-2	Stand By
M8	3 Gang Var. Cap	SA:8102	Main
M9	3 Gang Var. Cap.		Bandspread
M10	"S" Meter	J984-3	

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

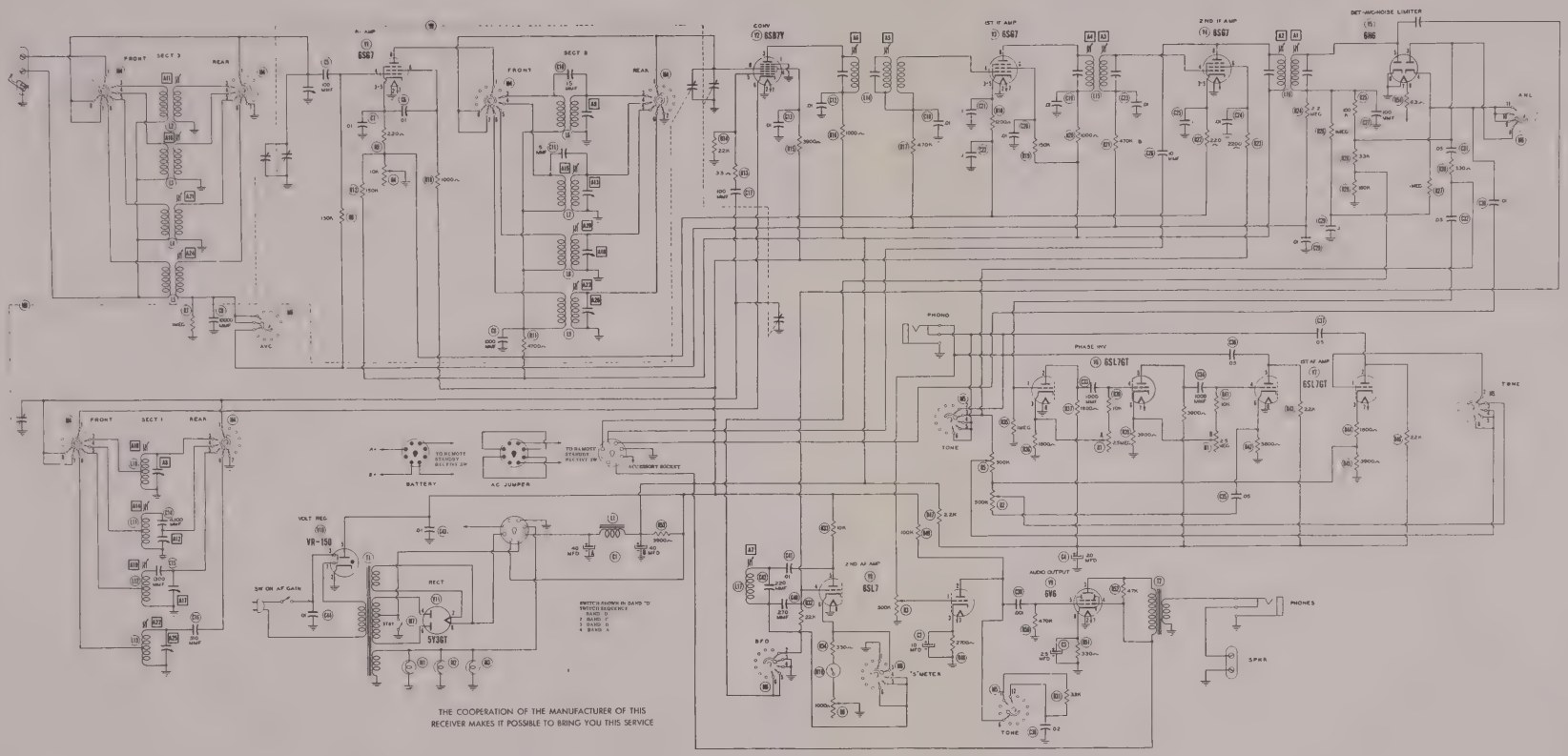
To set dial pointer, turn both tuning gangs fully closed and set both pointers to zero on the bandspread logging scales. Turn the bandspread pointer to "set" (minimum cap.).
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Direct	High side to stator on center section of tuning gang. Low side to chassis.	455KC (400 ∿ Mod.)	A	Tuning gang fully open	Across voice coil	A1, A2, A3, A4, A5, A6	Adjust for maximum output.
2.	"	"	455KC (Unmod.)	"	"	"	A7	Turn the limiterSw. to CW. Remove CW pitch knob. Loosen set screw securing pitch control shaft to coil slug. Turn control shaft so flatted portion is straight up. Insert small screw driver in hollow shaft and adjust A7 for zero beat. Tighten set screw and replace pitch control knob.
3.	300Ω carbon resistor	Across A-A terminals with 300Ω in series with high side. (disconnect shorting link.)	34MC (400 ∿ Mod.)	"	34MC	"	A8, A9	Adjust for maximum output.
4.	"	"	12MC	"	12MC	"	A10, L6, A 11	Adjust A10 and A 11 for maximum output. Adjust coil turn inside L6 form for maximum output. Repeat steps 3 and 4 until no further improvement can be made.
5.	"	"	12MC	B	12MC	"	A12, A13	Adjust for maximum output.
6.	"	"	4.4MC	"	4.4MC	"	A14, A15, A16	Repeat steps 5 and 6 until no further improvement can be made.
7.	"	"	4.4MC	C	4.4MC	"	A17, A18	Adjust for maximum output.
8.	"	"	1.6MC	"	1.6MC	"	A19, A20, A21	Repeat steps 7 and 8 until no further improvement can be made.
9.	"	"	.6MC	D	.62MC	"	A22, A23, A24	Turn bandspread pointer to zero. Adjust for maximum output.
10.	"	"	1.5MC	"	1.5MC	"	A25, A26	Turn band spread pointer to "set". Adjust for maximum output. Check dial calibration at .6MC with bandspread dial at zero. If necessary repeat steps 9 and 10 until no further improvement can be made.



DIAL CORD DRIVE

BANDSPREAD -- FOR MAIN TUNING SEE PAGE ONE.



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ALL MEASUREMENTS TAKEN IN "D" BAND POSITION, AND ALL CONTROLS IN COUNTER-CLOCKWISE POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SG7	0V	0V	23VDC	-.1VDC	23VDC	150VDC	6.3VAC	290VDC
V 2	65B7-Y	0V	0V	290VDC	105VDC	§-12VDC	0V	6.3VAC	0V
V 3	6SG7	0V	0V	24VDC	0V	24VDC	250VDC	6.3VAC	290VDC
V 4	6SG7	0V	0V	23VDC	0V	23VDC	150VDC	6.3VAC	290VDC
V 5	6H6	0V	0V	-.3VDC	-.3VDC	-.3VDC	105VDC	5.3VAC	0V
V 6	6SL7GT	0V	190VDC	2VDC	1.8VDC	185VDC	4VDC	6.3VAC	0V
V 7	6SL7GT	3.8VDC	170VDC	5.6VDC	3.8VDC	165VDC	5.8VDC	6.3VAC	0V
V 8	6SL7GT	0V	105VDC	1.2VDC	-2VDC	140VDC	0V	6.3VAC	0V
V 9	6V6GT	0V	6.3VAC	260VDC	290VDC	0V	0V	0V	16.5VDC
V 10	VR-150	150VDC	0V	0V	0V	150VDC	0V	0V	0V
V 11	5Y3GT	150VDC	310VDC	0V	350VAC	0V	350VAC	0V	310VDC

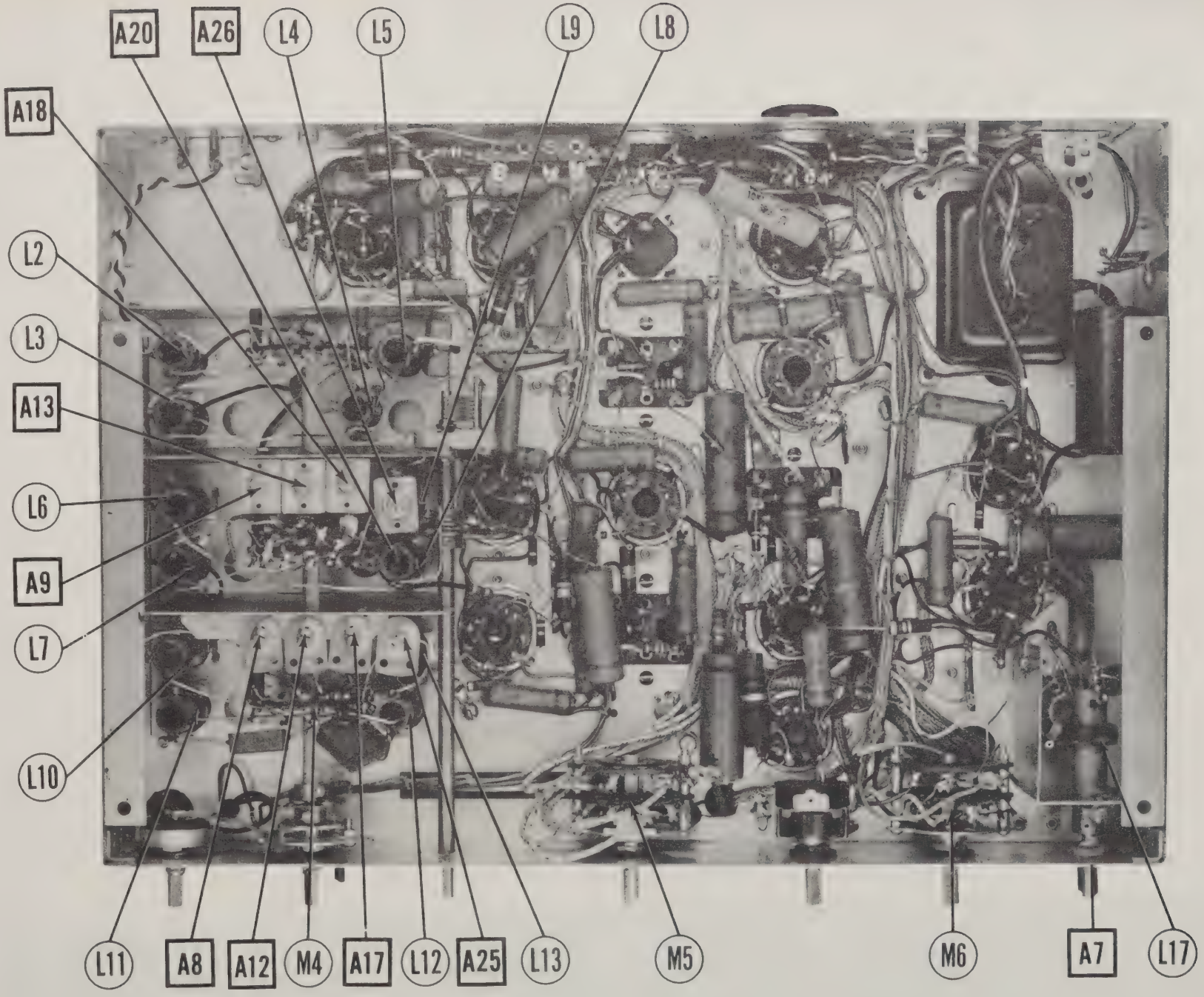
§ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SG7	0Ω	0Ω	10KΩ	1Meg	10KΩ	†5.5KΩ	.1Ω	†5KΩ
V 2	65B7-Y	0Ω	0Ω	†1.4KΩ	†8.2KΩ	22KΩ	.2Ω	.1Ω	5Ω
V 3	6SG7	0Ω	0Ω	10KΩ	1.3Meg	10KΩ	150KΩ	.1Ω	†1.3KΩ
V 4	6SG7	0Ω	0Ω	10KΩ	1.3Meg	10KΩ	6.5KΩ	.1Ω	†250Ω
V 5	6H6	0Ω	0Ω	200KΩ	190KΩ	270KΩ	†100KΩ	2Ω	0Ω
V 6	6SL7GT	1Meg	†22KΩ	1.8KΩ	11KΩ	†28KΩ	3.9KΩ	.1Ω	0Ω
V 7	6SL7GT	4KΩ	†46KΩ	6KΩ	15KΩ	†46KΩ	5.5KΩ	.1Ω	0Ω
V 8	6SL7GT	0Ω	†100KΩ	2.7KΩ	22KΩ	†13KΩ	0Ω	.1Ω	0Ω
V 9	6V6GT	0Ω	.1Ω	†1KΩ	†260Ω	470KΩ	Inf.	0Ω	330Ω
V 10	VR-150	†4.3KΩ	0Ω	Inf.	Inf.	†4.3KΩ	Inf.	Inf.	Inf.
V 11	5Y3GT	35KΩ	35KΩ	Inf.	75Ω	Inf.	80Ω	Inf.	35KΩ

† MEASURED FROM PIN 8 OF V11

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.


A20
A26
L4
L5
L9
L8
A18
L2
L3
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A8
A12
M4
A17
L12
A25
L13
M5
M6
A7
L17

PHOTOFACT* Folder

OLYMPIC MODELS 762, 783, 967, 968, 970

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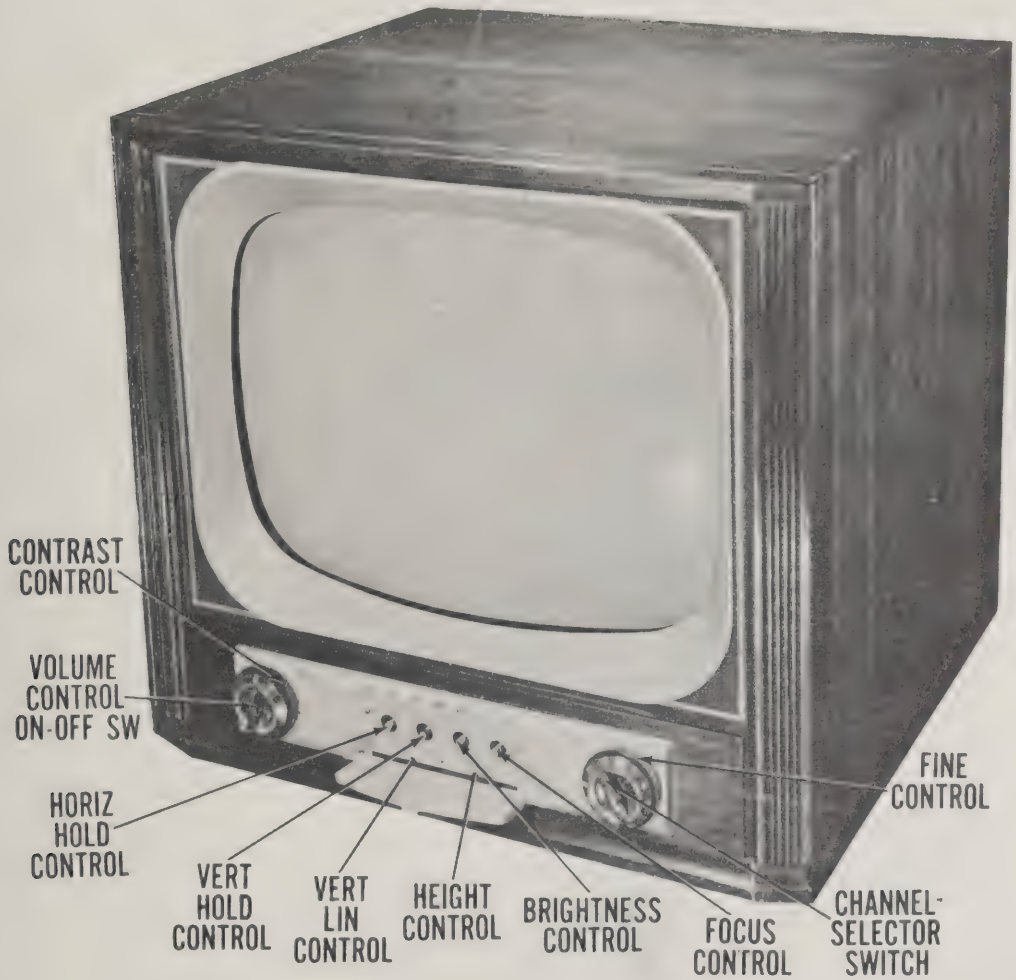

OLYMPIC MODELS 762, 783, 967, 968, 970

OPYMPIC MODEL 970

TRADE NAME	Olympic, Models 762, 783, 967, 968, 970
MANUFACTURER	Olympic Radio And Television Corp., 34-01 38 Ave., Long Island City (1), N.Y.
TYPE SET	Television Receiver
TUBES	Twenty Two
POWER SUPPLY	110-120 Volts AC - 60 Cycle — RATING 2 Amp. @ 117 Volts AC
TUNING RANGE—	Channels 2 thru 13

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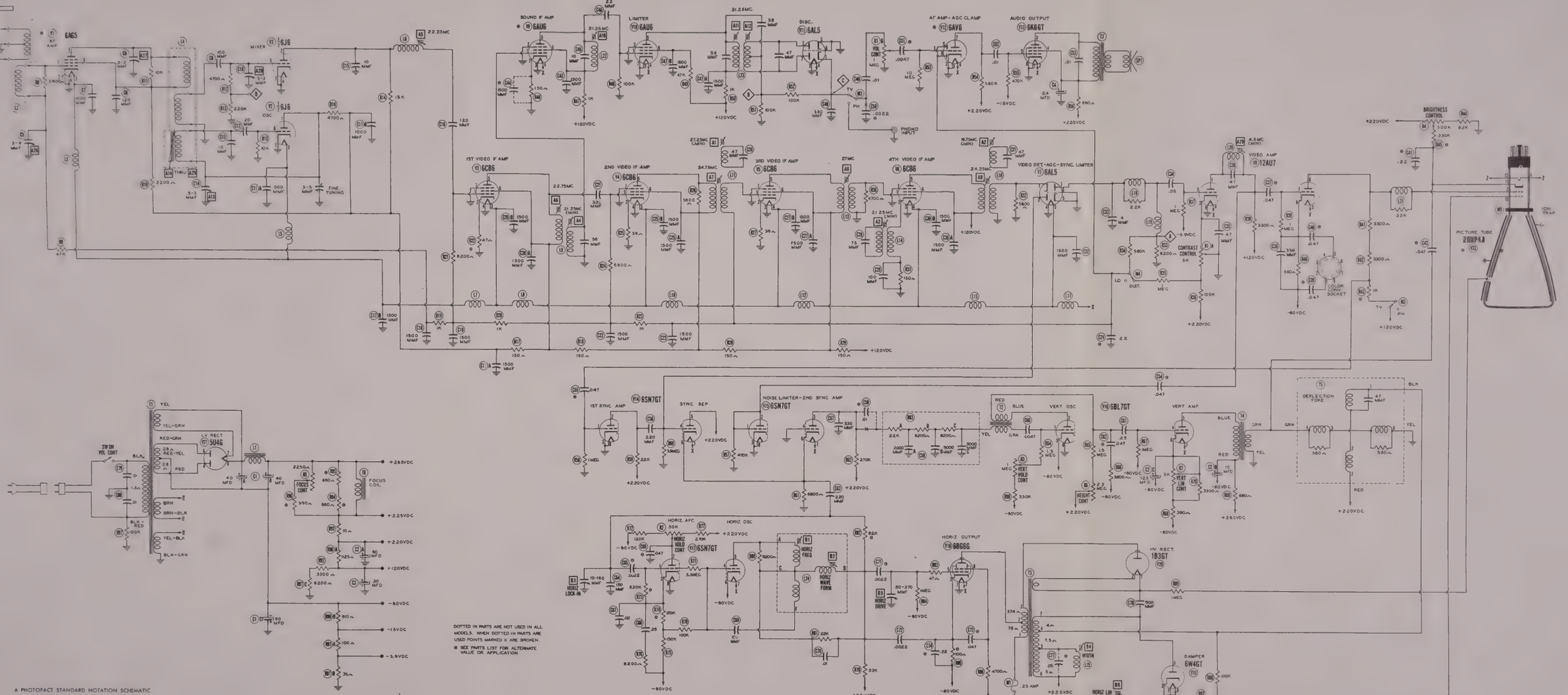

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DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.

⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

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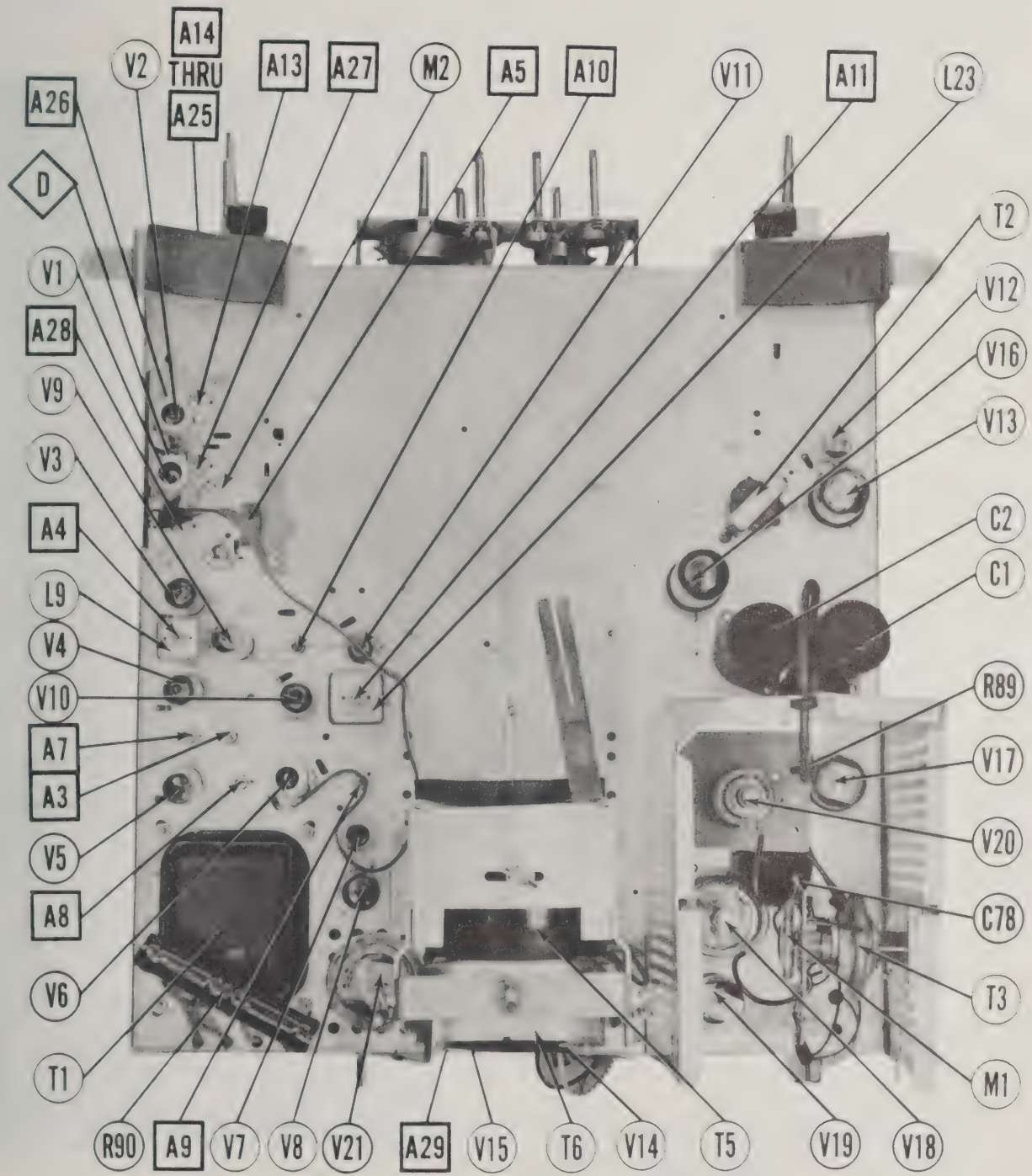
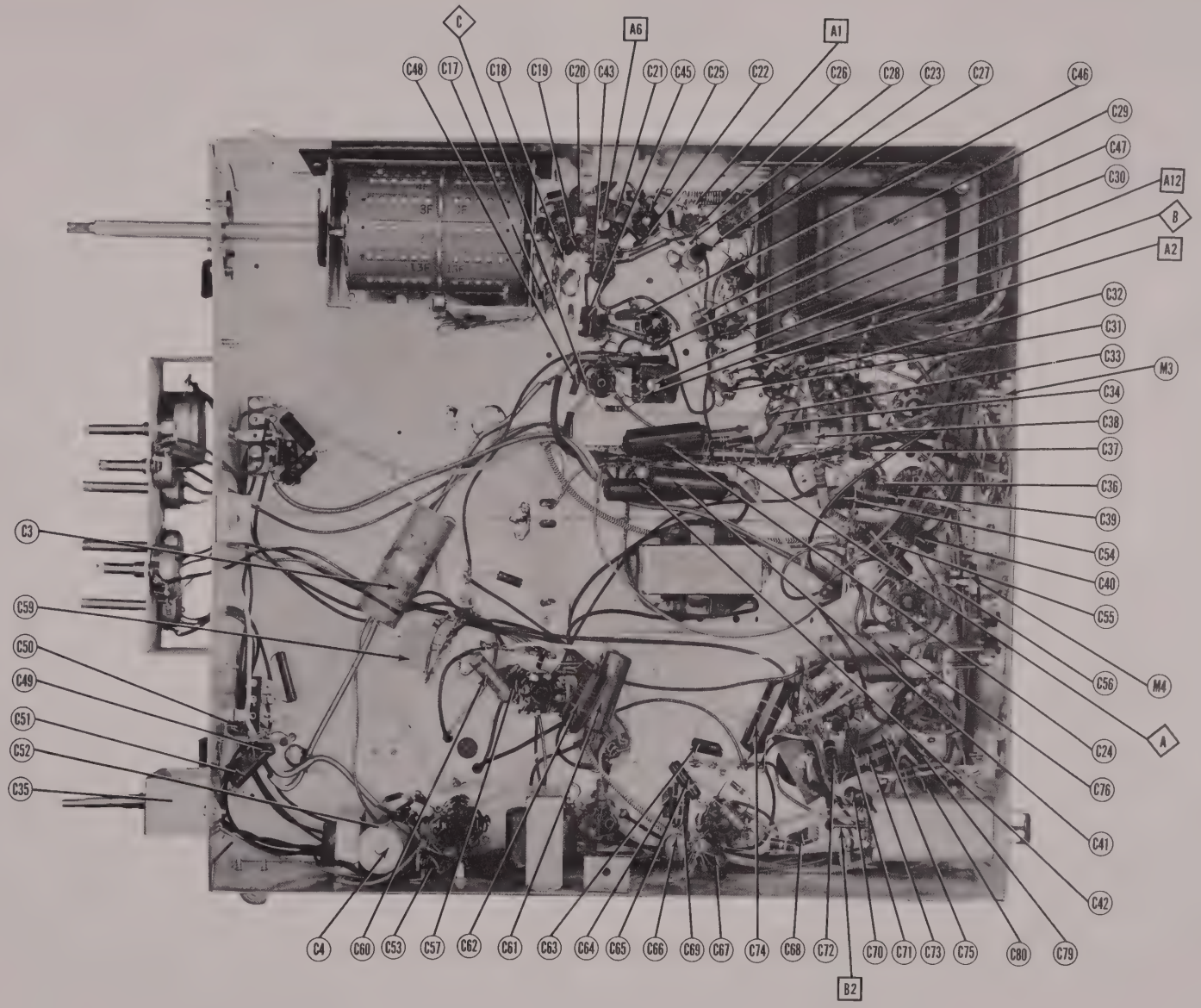
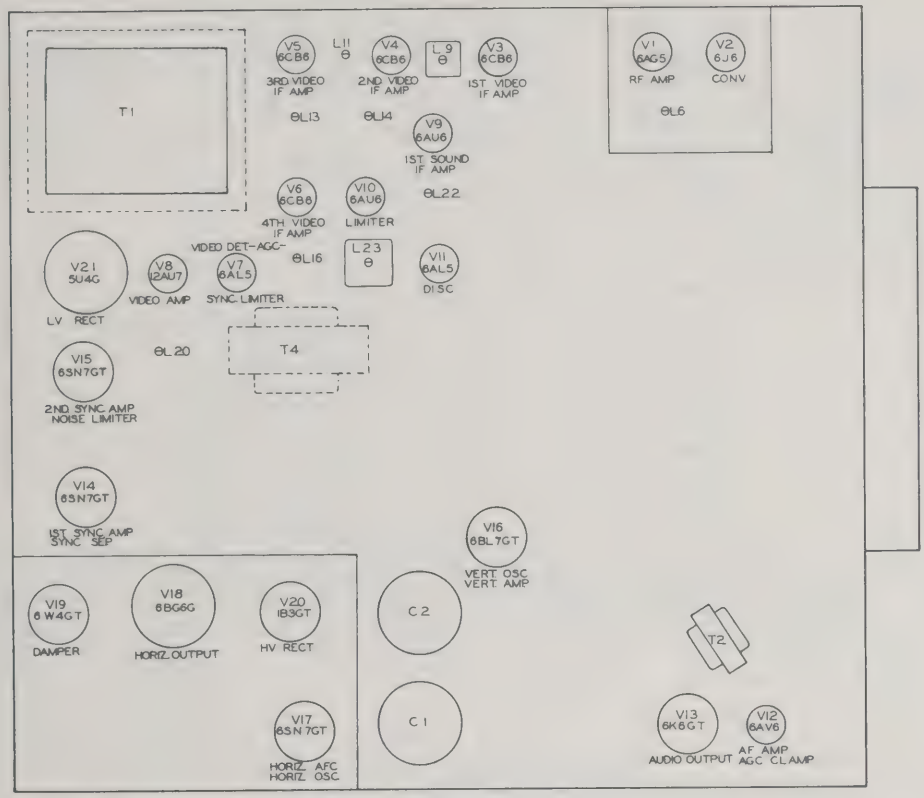


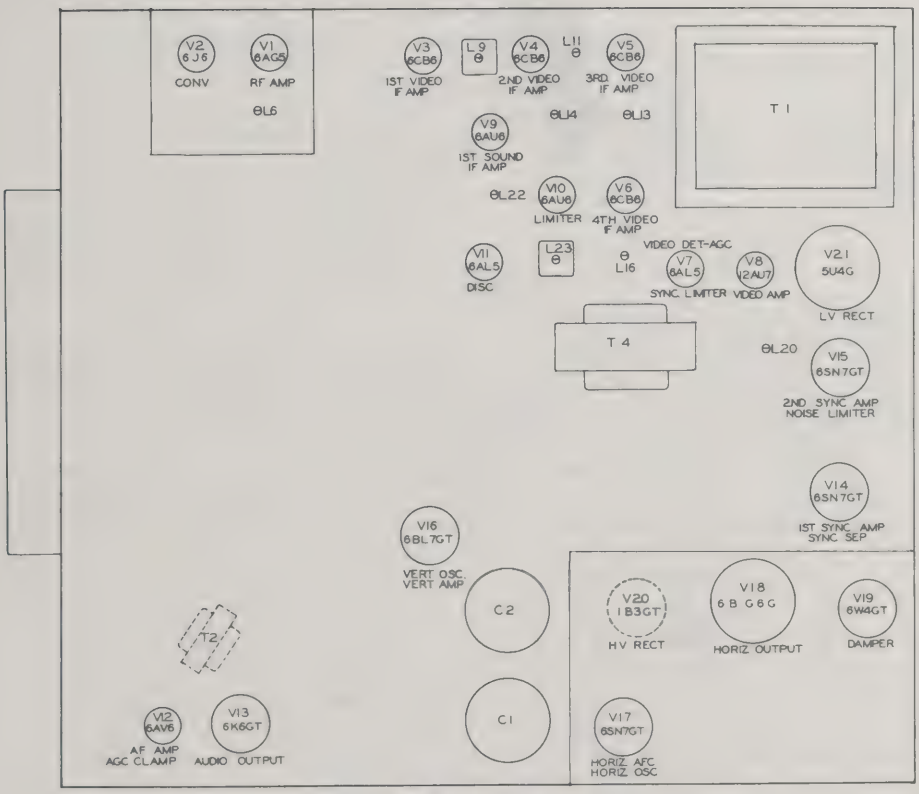
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

OLYMPIC MODELS 762, 783, 967, 968, 970

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube, (V17), from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube, (V2), and replace it with a 6J6 which has Pin 1 removed. This will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded lead of C24, connect the positive lead to chassis.
Set the sensitivity switch to "local".

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	27.25MC (Unmod.)	Any	DC probe to Point (A). Common to chassis.	A1	Adjust for MINIMUM deflection
2.	"	"	19.75MC	"	"	A2	"
3.	"	"	21.25MC	"	"	A3, A4	Adjust A3 for MINIMUM deflection, then short C28 and adjust A4 for MINIMUM deflection. Remove short from C28.
4.	"	"	22.25MC	"	"	A5	Adjust for maximum deflection.
5.	"	"	22.75MC	"	"	A6	"
6.	"	"	24.75MC	"	"	A7	"
7.	"	"	27.0MC	"	"	A8	"
8.	"	"	24.25MC	"	"	A9	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	24MC (10MC SWP)	21.25MC 22.5MC 25.75MC	Any	Vert. amp. to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A5 thru A9 for proper response. If set is to be operated in a "fringe" area reduce the bias to 1.5 volts and retouch A5 thru A9 for response similar to figure 2. If necessary SLIGHTLY retouch A2 to reduce the "pop up" between the traps to less than 10%.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect a 100KΩ decoupling resistor in series with the DC probe of the VTVM.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	.001MFD	High side to Pin 1 (grid) of 6BA6, (V9). Low side to chassis.	21.25MC (Unmod.)	Any	DC probe thru 100KΩ to Point (B). Common to chassis.	A10, A11	Adjust for maximum deflection.
11.	"	"	"	"	DC probe thru 100KΩ to Point (C). Common to chassis.	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.
Connect a 100KΩ isolating resistor in series with the oscilloscope vertical input lead.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	.001MFD	High side to Pin 1 (grid) of 6BA6, (V9). Low side to chassis.	21.25MC (450KC SWP)	21.25MC	Any	Vert. amp. thru 100KΩ to Point (B). Low side to chassis.	A10, A11	Adjust for maximum amplitude and symmetry as per figure 3.
11.	"	"	"	"	"	Vert. amp. thru 100KΩ to Point (C). Low side to chassis.	A12	Adjust A12 so 21.25MC occurs at center of crossover lines as per figure 4. SLIGHTLY retouch A-11 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Leave the bias connected as during video IF alignment, but reduce battery to 1 1/2 volts.
Complete oscillator alignment may not be necessary.
If the oscillator seems to be off frequency approximately the same amount for a majority of the channels, it may be possible to correct them in one step using A13. It should be noted that this is an all channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A13 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
The signal generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
12.	Direct	High side to either ant. terminal. Low side to chassis.	215.75MC (Unmod.)	13	DC probe to Point (C). Common to chassis.	A14	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
			209.75MC	12		A15	
			203.75MC	11		A16	
			197.75MC	10		A17	
			191.75MC	9		A18	
			185.75MC	8		A19	
			179.75MC	7		A20	
			87.75MC	6		A21	
			81.75MC	5		A22	
			71.75MC	4		A23	
			65.75MC	3		A24	
			59.75MC	2		A25	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND CONVERTER ALIGNMENT

Remove the bias battery and short Pin 7 of V7 to chassis.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to Point (D). Low side to chassis.	A26, A27, A28	Adjust for response curve similar to figure 5 with markers above 90%.
14.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"		Check all channels for response similar to figure 5. If markers fall below 70% on any channel, make slight adjustment of A26, A27 and A28 with channel switch set for that channel. Recheck all channels to see that they have not been seriously effected.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

4.5MC TRAP ADJUSTMENT

After alignment is completed, restore set to original operating condition and tune in a local TV station. Back out, (counter-clockwise), the 4.5MC trap adjustment, (A29), until a 4.5MC beat appears in the picture. Slowly adjust A29 clockwise to the point where the 4.5MC interference disappears. Do not turn beyond this point.

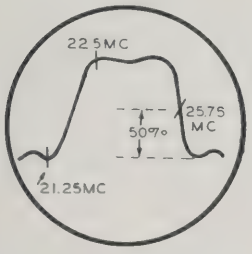


FIG.1

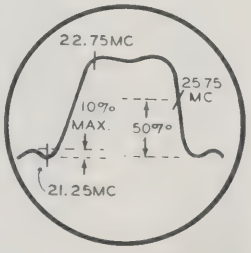


FIG.2

FIG. 3

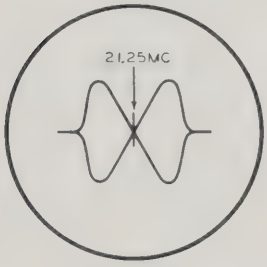


FIG. 4

FIG. 5

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-1.2VDC	0V	5.9VAC	0V	105VDC	105VDC	0V		
V 2	6J6	70VDC	60VDC	5.9VAC	0V	-1VDC	§-5.2VDC	0V		
V 3	6CB6	-1.7VDC	.2VDC	5.9VAC	0V	100VDC	100VDC	0V		
V 4	6CB6	-.6VDC	.4VDC	5.9VAC	0V	105VDC	105VDC	0V		
V 5	6CB6	-.6VDC	.4VDC	0V	5.9VAC	110VDC	110VDC	0V		
V 6	6CB6	0V	1.6VDC	0V	6VAC	115VDC	115VDC	0V		
V 7	6AL5	0V	-2.1VDC	6VAC	0V	0V	0V	-1VDC		
V 8	12AU7	115VDC	-.8VDC	3.4VDC	6.1VAC	6.1VAC	¶110VDC	¶1VDC	¶6.6VDC	0V
V 9	6AU6	0V	0V	0V	6.1VAC	110VDC	110VDC	1VDC		
V 10	6AU6	-.6VDC	0V	0V	6.1VAC	110VDC	70VDC	0V		
V 11	6AL5	0V	-.4VDC	0V	6.1VAC	0V	0V	-.5VDC		
V 12	6AV6	-.6VDC	0V	0V	6.1VAC	-.1VDC	-.6VDC	70VDC		
V 13	6K6GT	0V	6.1VDC	195VDC	205VDC	-11VDC	-15 VDC	0V	0V	
V 14	6SN7GT	-.4VDC	75VDC	0V	-1.8VDC	245VDC	6.4VDC	6.1VAC	0V	
V 15	6SN7GT	-.7VDC	-.7VDC	0V	0V	115VDC	6.4VDC	6.1VAC	0V	
V 16	6BL7GT	¶-18VDC ¶-14VDC	¶55VDC ¶105VDC	¶0V	¶-.2VDC	¶360VDC	¶13VDC ¶25VDC	6.1VAC	0V	
V 17	6SN7GT	¶-2.8VDC	¶65VDC ¶90VDC	¶-23VDC	¶-80VDC	¶205VDC	¶0V	6.1VAC	0V	
V 18	6BG6G	0V	6.1VAC	¶8.5VDC	¶0V	¶-16VDC	¶-16VDC	0V	¶260VDC	Top Cap *
V 19	6W4GT	0V	0V	440VDC	440VDC	220VDC	220VDC	0V	6.1VAC	
V 20	1B3GT	* DO NOT MEASURE								Top Cap *
V 21	5U4G	0V	300VDC	0V	¶360VAC	33VDC	¶360VAC	0V	300VDC	
V 22	20DP4A	‡6.3VAC	33VDC	PIN 10 340VDC	PIN 11 30VDC 210VDC	PIN 12 ‡6.3VAC				

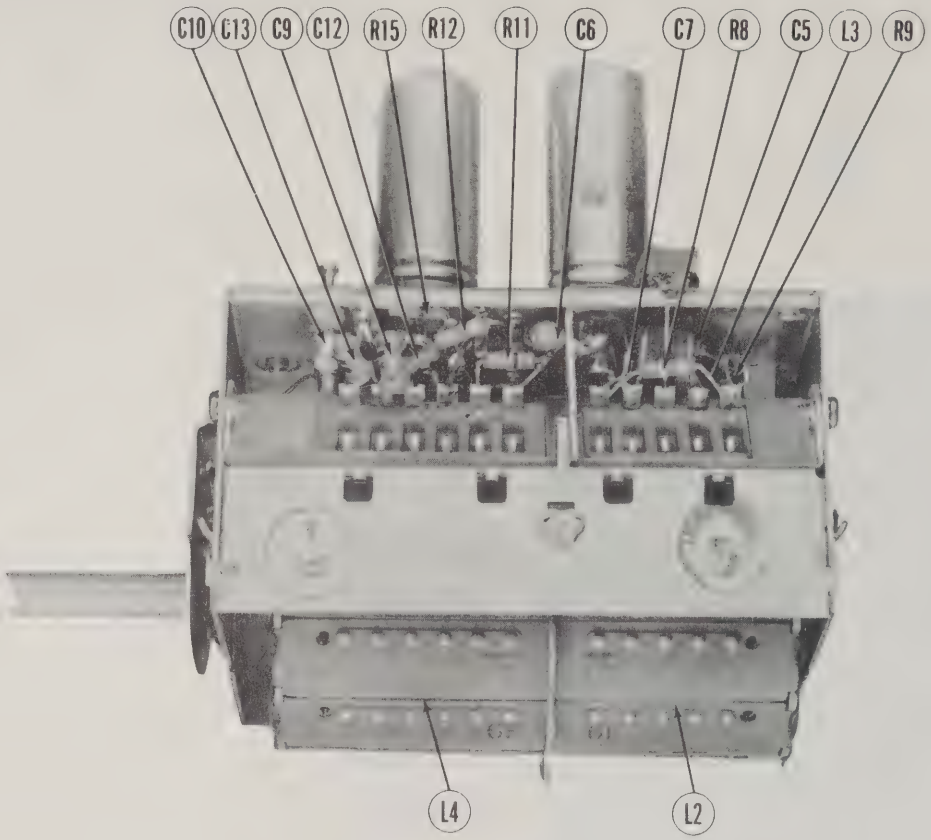
ALL MEASUREMENTS WITH PICTURE TUBE REMOVED
ALL MEASUREMENTS IN TV SWITCH POSITION
LOCAL - FRINGE SWITCH IN LOCAL POSITION
FOCUS CONTROL FULLY CONTER-CLOCKWISE
‡ MEASURED ACROSS PINS 1 AND 12 OF V22
¶ MEASURED FROM -80VDC LINE
§ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

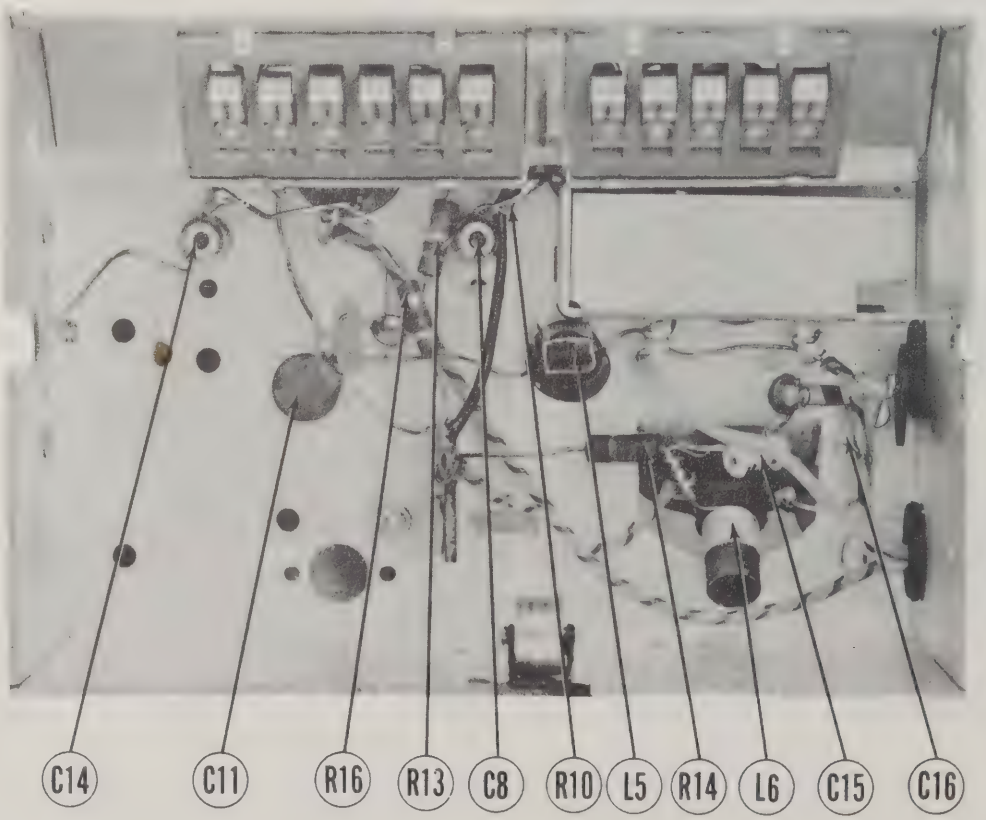
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	618KΩ	0Ω	.2Ω	0Ω	†4.2KΩ	†4.2KΩ	0Ω		
V 2	6J6	†6.7KΩ	†17KΩ	.2Ω	0Ω	224KΩ	10KΩ	0Ω		
V 3	6CB6	578KΩ	47Ω	.1Ω	0Ω	†1.9KΩ	†1.9KΩ	0Ω		
V 4	6CB6	576KΩ	39Ω	.1Ω	0Ω	†1.7KΩ	†1.7KΩ	0Ω		
V 5	6CB6	568KΩ	39Ω	0Ω	.1Ω	†1.5KΩ	†1.5KΩ	0Ω		
V 6	6CB6	.5Ω	150Ω	0Ω	.1Ω	†1.4KΩ	†1.4KΩ	0Ω		
V 7	6AL5	.2Ω	3.9Meg	.1Ω	0Ω	0Ω	0Ω	8.2KΩ		
V 8	12AU7	†4.7KΩ	1Meg	5KΩ	.1Ω	.1Ω	†8.2KΩ	¶1Meg	¶560	0Ω
V 9	6AU6	.1Ω	0Ω	0Ω	.1Ω	†2.4KΩ	†2.4KΩ	150Ω		
V 10	6AU6	100KΩ	0Ω	0Ω	.1Ω	†2.4KΩ	†48KΩ	0Ω		
V 11	6AL5	200KΩ	100KΩ	0Ω	.1Ω	0Ω	0Ω	100KΩ		
V 12	6AV6	10Meg	0Ω	0Ω	.1Ω	568KΩ	568KΩ	†560KΩ		
V 13	6K6GT	Inf.	.1Ω	†1.3KΩ	†1KΩ	470KΩ	135Ω	0Ω	0Ω	
V 14	6SN7GT	1Meg	†22KΩ	0Ω	3.9Meg	†350Ω	6.8KΩ	.1Ω	0Ω	
V 15	6SN7GT	470KΩ	470KΩ	0Ω	0Ω	†270KΩ	6.8KΩ	.1Ω	0Ω	
V 16	6BL7GT	¶2.8Meg 1.8Meg	†4Meg 1.5Meg	¶0Ω	¶1Meg	†1.4KΩ	¶2.5KΩ 390Ω	.1Ω	0Ω	
V 17	6SN7GT	¶800KΩ	¶110KΩ 95KΩ	¶300KΩ	¶250KΩ	†41KΩ	¶0Ω	.1Ω	0Ω	
V 18	6BG6G	Inf.	.1Ω	¶100Ω	¶0Ω	¶1Meg	¶1Meg	0Ω	†5KΩ	Top Cap #112Ω
V 19	6W4GT	Inf.	Inf.	†200KΩ	†200KΩ	†325Ω	†325Ω	0Ω	.1Ω	
V 20	1B3GT	PINS 1 THRU 8 INF. RESISTANCE								Top Cap #485Ω
V 21	5U4G	Inf.	10KΩ	Inf.	¶28Ω	†8.2KΩ	¶28Ω	Inf.	10KΩ	
V 22	20DP4A	‡ .2Ω	†8.2KΩ	PIN 10 #100KΩ	PIN 11 400KΩ 325KΩ	PIN 12 ‡ .2Ω				

ALL MEASUREMENTS WITH PICTURE TUBE REMOVED
ALL MEASUREMENTS IN TV SWITCH POSITION
LOCAL - FRINGE SWITCH IN LOCAL POSITION
† MEASURED FROM PIN 8 OF V21
# MEASURED FROM PIN 3 OF V19
¶ MEASURED FROM -80VDC LINE
‡ MEASURED ACROSS PINS 1 AND 12 OF V22
FOCUS CONTROL FULLY COUNTER-CLOCKWISE

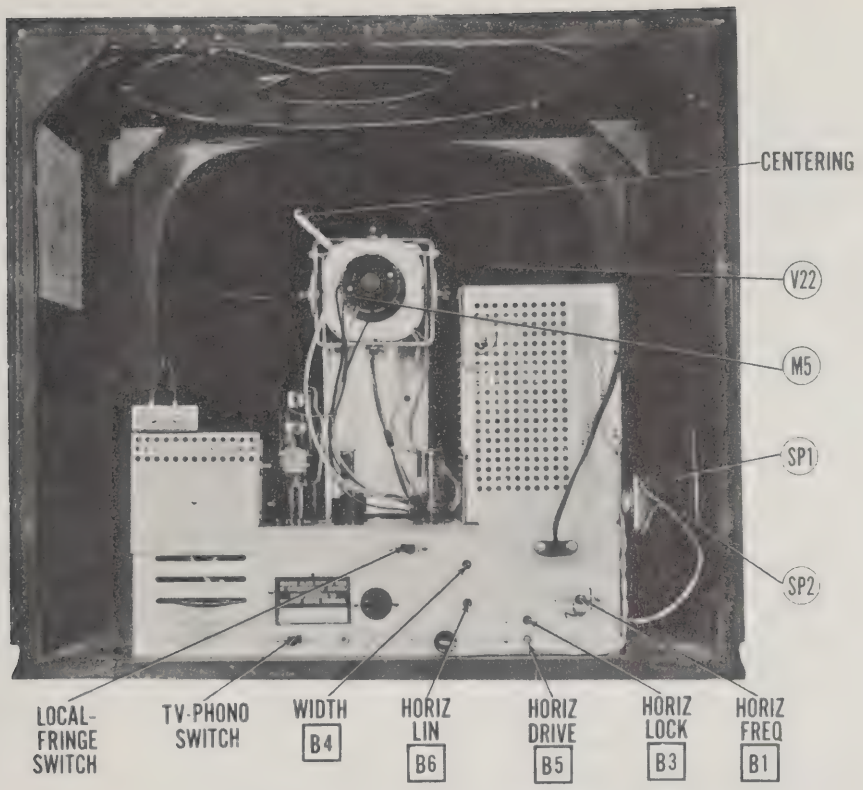
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.
Allow 15 to 30 minutes for the set to warm up.
Turn the horizontal lock trimmer, (B3), to one turn counter clockwise from tight. If set is to be operated in a "fringe" area on weak signals only, turn B3 two turns from tight.
Connect a short between terminals C and D of L24 and turn the horizontal hold control to fully clockwise.
Adjust the horizontal frequency slug, (B1), until the picture synchronizes and then counter-clockwise until the blanking bar shows in the picture. If signal is weak, 3 or 4 bars, sloping downward to the right, will be present.
Remove the short from L24 and connect the vertical input lead through a 50KΩ resistor, to terminal C of L24.
Adjust the waveform slug, (B2), until the broad and narrow peaks of the waveform on the scope are of equal height as shown in figure 6. If neccessary adjust B1 to keep the picture synchronized during adjustment of B2.
Remove the oscilloscope connection and turn the hold control through its entire range. The picture should remain in sync with the possible exception of maximum clockwise, where the blanking bar may appear, or with a weak signal 3 or 4 sloping bars.
Adjust the width slug, (B4), until the picture fills the mask horizontally.
Adjust the horizontal drive trimmer, (B5), for best compromise between brightness and horizontal linearity.
Adjust the horizontal linearity slug, (B6), for best linearity in the right half of the picture.
Note: It is advisable to adjust both the height and width of the picture to a size slightly larger than required to fill the mask. This will render a picture sufficient to fill the mask during periods of low line voltage, and after aging of tubes and components.

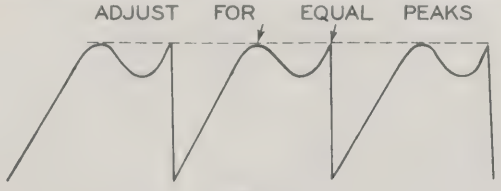


FIG. 6

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove seven wood screws from rear cover. Remove rear cover.
3. Disconnect speaker.
4. Disconnect built-in antenna.
5. Remove four hex head bolts from chassis. Remove chassis.
6. Remove four hex nuts from speaker. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECCESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No	USE	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6AG5	6AG5	7BD	
B	RF Amplifier	6BC5	6BC5	7BD	
C	RF Amplifier	6CB6	6CB6	6CK	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	6CK	
V4	2nd. Video IF Amp.	6CB6	6CB6	6CK	
V5	3rd. Video IF Amp.	6CB6	6CB6	6CK	
V6	4th. Video IF Amp.	6CB6	6CB6	6CK	
V7	Video Detector - AGC-Sync. Limiter	6AL5	6AL5	6BT	
V8	Video Amplifier	12AU7	12AU7	9A	
V9A	Sound IF Amp.	6AU8	6AU8	7BK	
B	Sound IF Amp.	6BA8	6BA8	7BK	
V10	Limiter	6AU6	6AU6	7BK	
V11	Discriminator	6AL5	6AL5	6BT	
V12A	AF Amplifier-AGC Clamp	6AV6	6AV6	7BT	
B	AF Amplifier -AGC Clamp	6AT6	6AT6	7BT	
V13	Audio Output	6K6GT	6K6GT	7S	
V14	1st. Sync. Amp. - Sync. Separator	6SN7GT	6SN7GT	8BD	
V15	2nd. Sync. Amp.- Noise Limiter	6SN7GT	6SN7GT	8BD	
V16	Vertical Oscillator - Vert. Amplifier	6BL7GT	6BL7GT	8BD	
V17	Horiz. AFC-Horiz. Oscillator	6SN7GT	6SN7GT	8BD	
V18	Horiz. Output	6BG6G	6BG6G	5BT	
V19	Damper	6W4GT	6W4GT	4CG	
V20	HV Rectifier	1B3GT	1B3GT	3C	
V21	LV Rectifier	5U4G	5U4G	5T	
V22A	Picture Tube	20DP4A	20DP4A	12D	
B	Picture Tube	20DP4	20DP4	12D	
C	Picture Tube	20CP4	20CP4	12D	
D	Picture Tube	17BP4	17BP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	C0-2067-1	AFH88J12E		UPT-4445-B335		TVL-3764	▲ Filter
B	40	450							■ Filter
C	80	200							▲ Bias Filter
C2A	80	450	C0-2066-1	AFH62J25A		UPT403		TVL-2776	▲ Filter
B	10	450						TVA-7311	■ Vert. Amp. Decoupling
C	125	25							▲ Vert. Amp. Cathode Filter
C3	50	350	C0-2344	PRS450/50		UPT5035		TVA-1713	
C4	24	300	C0-1493	PRS350/24		BR2035A		TVA-1610	Audio Output Decoupling
C5	3-9								Variable Trimmer
C6	120			SII20	D6-121		GP2K-121	19C29	RF Amp. Decoupling
C7	1000			SI1000	D6-102		GP2L-102	19C1	RF Amp. Fil.
C8	5-3				829-3				Varable Trimmer
C9	100			SI100N750	TCN-100		N750L-101		RF Coupling
C10	.5-3				829-3				Variable Trimmer
C11A	1000			BPD-2X001	DD-2-102		812-001	29C7	Conv. Fil.
B	1000								RF Bypass
C12	20			SI20NP0	TCZ-20		NP0K-200		Osc. Grid Cap.
C13	10			SI10N750	TCN-10		N750K-100		Fixed Trimmer
C14	.5-3				829-3				Variable Trimmer
C15	10			SI10NP0	TCZ-10		NP0K-100	19C3	Fixed Trimmer
C16	120				TCN-120				IF Coupling
C17A	1500			BPD-2X0015	DD-2-152		812-0015	29C6	RF Bypass
B	1500								Fil. Bypass
C18	1500			SI1500	D6-152	1W5D15	GP2L-152	29C8	AGC Filter
C19	1500			SI1500	D6-152	1W5D15	GP2L-152	29C8	AGC Filter
C20A	1500			BPD-2X0015	DD-2-152	1W5D15	812-0015	29C6	1st. Video IF Decoupling
B	1500					1W5D15			1st. Video IF Fil.
C21	330	500		1468-00035	D6-331	5W5T3	GP2K-331	1FM-335	IF Coupling
C22	1500			BPD-0015	D6-152	1W5D15	GP2L-152	29C8	AGC Filter
C23	1500			SI1500	D6-152	1W5D15	GP2L-152	29C8	AGC Filter
C24	.22	400		P488-22		GT4P25		4TM-P22	AGC Filter †
C25A	1500			BPD-2X0015	DD-2-152	1W5D15	812-0015	29C6	2nd. Video IF Decoupling
B	1500					1W5D15			2nd. Video IF Fil.
C26	47			SI47N750	TCN-47		N750K-470		Fixed Trimmer
C27A	1500			BPD-2X0015	DD-2-152	1W5D15	812-0015	29C6	3rd. Video IF Decoupling
B	1500					1W5D15			3rd. Video IF Fil.
C28	75			SI75NP0	TCZ-75		NP0-333-750		Fixed Trimmer
C29	100	500		1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	4th. Video IF Cathode
C30A	1500			BPD-2X0015	DD-2-152	1W5D15	812-0015	29C6	4th. Video IF Decoupling
B	1500					1W5D15			4th. Video IF Fil.
C31	47			SI47N750	TCN-47		N750K-470		Fixed Trimmer
C32	1500			BPD-0015	DD-152		801-0015	29C8	Video Det. Fil.
C3	4	1500		1469-000005	TCZ-4.7	5R5V5	NP0K-4R7	MS-55	Video Diode Load
C34	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C35	47	500		1468-00005	D6-470	5W5-5	GP1K-470	1FM-45	Vidoe Amp. Cathode
C36	47			SI47NP0	TCZ-47	5R5Q5		29C14	Fixed Trimmer
C37	.047	600		P688-047	DF-503	PTE6S5		6TM-S47	Video Coupling *
C38	330	500		1468-00035	D6-331	5R5T3	GP2K-331	19C14	Video Amp. Cathode
C39	.047	400		P488-047	DF-503	PTE4S5		4TM-S47	Isolation **
C40	.047	400		P488-047	DF-503	PTE4S5		4TM-S47	Video Coupling **
C41	.22	400		P488-22		GT4P25		4TM-P22	Picture Tube Cathode ‡
C42	.047	600		P688-047	DF-503	PTE6S5		6TM-S47	Vert. Sweep Coupling *
C43	1500			BPD-0015	DD-152	1W5D15	801-0015	29C8	1st. Sound IF Dec.
C44	1500			BPD-0015	DD-152	1W5D15	801-0015	29C8	1st. Sound IF Cathode †
C45	10			1468-00001	D6-100	5W5Q1	GP1K-100	MS-41	Fixed Trimmer
C46	22	500		SI22	D6-220	5W5Q25	GP1K-220	19C23	Sound IF Coupling
C47A	1500			BPD-2X0015	DD-2-152	1W5D15	812-0015	29C6	2nd. Sound IF Plate
B	1500					1W5D15			2nd. Sound IF Screen
C48	330	500		1468-00035	D6-331	5R5T3	GP2K-331	19C14	RF Bypass
C49	.01	600		P688-01	D6-103	PTE6S1	821-01	6TM-S1	Audio Coupling

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C50	.0022	600		P688-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	Tone Comp. †
C51	.0047	600		P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Audio Coupling ††
C52	.01	600		P688-01	D6-103	PTE6S1	821-01	6TM-S1	Audio Coupling
C53	.01	600		P688-01	D6-103	PTE6S1	821-01	6TM-S1	Audio Output Plate
C54	.047	300		P468-047	DF-503	PTE4S5		4TM-S47	Noise Limiter Coupling *
C55	.047	600		P688-047	DF-503	PTE6S5		6TM-S47	Sync. Coupling *
C56	220	500		1469-00025	D6-221	5R5T25	GP2K-221	19C13	Sync. Coupling
C57	330	500		1468-00035	D6-331	5R5T3	GP2K-331	19C14	2nd. Sync. Amp. Dec.
C58	.01	600		P688-01	D6-103	PTE6S1	821-01	6TM-S1	Vert. Sync. Coupling †
C59A	2000			P688-002		PTE6D2	GP2-333-202	6TM-D22	Integrator Net
B	5000			P688-005	PC-100 ♦	PTE6D5	GP2-333-502	6TM-D5	Integrator Net
C	5000			P688-005		PTE8D5	GP2-333-502	6TM-D5	Integrator Net
C60	.0047	600		P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Vert. Osc. Grid
C61	.25	400		P488-25		GT4P25		4TM-P25	Vert. Sweep Coupling
C62	.047	600		P688-047	DF-503	PTE6S5		6TM-S47	Vert. Discharge *
C63	220	500		1469-00025	D6-221	5R5T25	GP2K-221	19C13	Horiz. Sync. Coupling
C64	150	500		1468-00015	D6-151	5W5T15	GP1K-151	1FM-315	Fixed Trimmer
C65	.0022	600		P688-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	Horiz. Sync. Coupling ††
C66	.25	400		P488-25		GT4P25		4TM-P25	AFC Filter
C67	.02	400		P488-02	DF-203	PTE4S2		4TM-S2	AFC Filter
C68	150	1000		1469-BV00015					Horiz. Osc. Grid
C69	.047	400		P488-047	DF-503	PTE4S5		4TM-S47	Horiz. AFC Plate **
C70	.01	600		P688-01		PTE6S1		6TM-S1	Fixed Trimmer
C71	.0022	600		P688-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	Horiz. Sweep Coupling ††
C72	.0022	600		P688-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	Horiz. Discharge
C73	.047	600		P688-047		PTE6S5		6TM-S47	Horiz. Output Screen *
C74	.22	400		P488-22		GT4P25		4TM-P22	Horiz. Output Cathode †
C75	.035	1000		P1088-033					Damper Filter
C76	.05	1000		P1088-05		GT1S5		MB-S5	Damper Filter
C77	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Fixed Trimmer †
C78	500	20000		HV20C	TV2-502				HV Filter
C79	.01	600		P688-01	D6-103	PTE6S1	821-01	6TM-S1	Line Filter
C80	.01	600		P688-01	D6-103	PTE6S1	821-01	6TM-S1	Line Filter

†† Some models use .005MFD 600V in this application.
††† Some models use .002MFD 600V in this application.
** Some models use .05MFD 400V in this application.
* Some models use .05MFD 600V in this application.
† Some models use .25MFD 400V in this application.
† Not used in all models.
♦ Items C59A, C59B, C59C, R63A, R63B, R63C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	5000Ω	½		Concentrikit			
B	1Meg	½	PT2267	B17-114 ϕ	RTV-100	8BB-656-S	Contrast Control - Front
C	Shaft end			B13-137 ϕ			Volume Control - Rear
D	Switch			E-187 ϕ			Attach per instructions in Concentrikit
R2A	50KΩ	½	PT2268	76-1 ϕ	AG-44-S	AN-31	Attach per instructions in Concentrikit
B	Shaft		Not req.	Q11-123	RS-2	AK-4	Horiz. Hold Control
R3A	1Meg	½	PT2269	Not req.	AG-61-S	AN-69	Attach to R2A per instructions
B	Shaft		Not req.	q11-137	RS-2	AK-4	Vert. Hold Control
R4A	500KΩ	½	PT2270	Not req.	AG-58-S	AN-59	Attach to R3A per instructions
B	Shaft		Not req.	Q11-133	FS-3	AK-4	Brightness Control
R5	2250Ω	4	PT2273	Not req.	RTV-9		Attach to R4A per instructions
R6A	2.5Meg	½	PT2272	Q11-239	AG-84-S	AN-83	Focus Control - Wire Wound
B	Shaft		Not req.	RQ	FKS-1/4	AK-4	Height Control
R7A	500Ω	½	PT2271	Q11-114	AM-19-S	AN-10	Attach to R6A per instructions
B	Shaft		Not req.	RQ	FKS-1/4	AK-4	Vert. Linearity Control
							Attach to R7A per instructions

ϕ Additional parts to used with Concentrikit.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 20% UNLESS OTHERWISE SPECIFIED
R8	3900Ω 10%	½		BTS-3900	Antenna Coil Shunt
R9	47KΩ 10%	½		BTS-47K	AGC Network
R10	2200Ω	½		BTS-2200	RF Amp. Decoupling
R11	10KΩ 10%	½		BTS-10K	RF Coil Shunt
R12	4700Ω 10%	½		BTS-4700	Mixer Grid
R13	220KΩ	½		BTS-220K	Mixer Grid
R14	15KΩ	½		BTS-15K	Mixer Plate
R15	10KΩ 10%	½		BTS-10K	Osc. Grid
R16	4700Ω 10%	½		BTS-4700	Osc. Plate
R17	150Ω	½		BTS-150	Decoupling
R18	150Ω	½		BTS-150	Decoupling
R19	1000Ω	½		BTS-1000	AGC Network
R20	1000Ω	½		BTS-1000	AGC Network
R21	82000Ω	½		BTS-8200	1st. Video IF Amp. Grid
R22	47Ω	½			1st. Video IF Amp. Cathode - See Note 1
R23	1000Ω 10%	½		BTS-1000	AGC Network
R24	68000Ω	½			2nd. Video IF Amp. Grid
R25	39Ω 10%	½			2nd. Video IF Amp. Cathode
R26	5600Ω	½			3rd. Video IF Transformer Shunt
R27	39Ω 10%	½			3rd. Video IF Amp. Cathode
R28	150Ω	½		BTS-150	Decoupling
R29	150Ω	½		BTS-150	Decoupling
R30	4700Ω	½		BTS-4700	4th. Video IF Transformer Shunt
R31	150Ω	½		BTS-150	4th. Video IF Amp. Cathode
R32	5600Ω	½		BTS-5600	5th. Video IF Transformer Shunt
R33	82000Ω	½		BTS-8200	Video Det. Diode Load
R34	560KΩ 10%	½		BTS-560K	AGC Network
R35	1Meg	½		BTS-1Meg	AGC Netwrk
R36	100KΩ	1		BTA-100K	Voltage Divider
R37	1Meg	½		BTS-1Meg	Video Amp. Grid
R38	3300Ω 10%	2		BTB-3300	Video Amp. Plate
R39	1Meg	½		BTS-1Meg	Video Amp. Grid
R40	560Ω	½		BTS-560	Video Amp. Cathode
R41	3300Ω 10%	2		BTB-3300	Video Amp. Plate
R42	3300Ω 10%	2		BTB-3300	Video Amp. Plate
R43	1000Ω 10%	1		BTS-1000	Video Amp. Plate - See Note 2

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R44	82KΩ 10%	½		BTS-82K	Voltage Divider
R45	330KΩ	½		BTS-330K	Picture Tube Cathode - See Note 3
R46	150Ω	½		BTS-150	Sound IF Amp. Cathode
R47	1000Ω 10%	½		BTS-1000	Sound IF Amp. Decoupling
R48	100KΩ	½		BTS-100K	Limiter Grid
R49	47KΩ 10%	½		BTS 47K	Limiter Screen
R50	1000Ω 10%	½		BTS-1000	Limiter Plate Decoupling
R51	100KΩ 10%	½		BTS-100K	Disc. Diode Load
R52	100KΩ 10%	½		BTS-100K	De-emphasis
R53	10Meg	½		BTS-10Meg	AF Amp. Grid
R54	560KΩ 10%	½		BTS-560K	AF Amp. Plate
R55	470KΩ	½		BTS-470K	Output Grid
R56	680Ω	½		BTA-680	Output Decoupling
R57	470KΩ 10%	½		BTS-470K	Noise Limiter Load
R58	1Meg	½		BTS-1Meg	1st. Sync. Amp. Grid
R59	82KΩ	1		BTA-82K	1st. Sync. Amp. Plate
R60	3.9Meg 10%	½		BTS-3.9Meg	Sync. Sep. Grid
R61	6800Ω	½		BTS-6800	Sync. Sep. Cathode
R62	270KΩ 10%	1		BTA-270K	2nd. Sync. Amp. Plate
R63A	22KΩ 10%	½		BTS-22K	Integrator
B	8200Ω 10%	½		BTS-8200	Integrator
C	8200Ω 10%	½		BTS-8200	Integrator
R64	1.5Meg 10%	½		BTS-1.5Meg	Vert. Osc. Grid
R65	1.5Meg 10%	½		BTS-1.5Meg	Vert. Osc. Plate
R66	5600Ω	½		BTS-5600	Vert. Peaking
R67	1Meg	½		BTS-1Meg	Vert. Output Grid
R68	390Ω 10%	1		BTA-390	Vert. Output Cathode
R69	680Ω	1		BTA-680	Vert. Output Decoupling
R70	3300Ω	½		BTS-3300	Vert. Linearity Control Shunt
R71	3.3Meg 5%	½		BTS-3.3Meg-5%	Voltage Divider
R72	120KΩ 10%	½		BTS-120K	Voltage Divider
R73	620KΩ 5%	½			Horiz. AFC Grid - See Note 4
R74	150KΩ	½		BTS-150K	Horiz. AFC Cathode
R75	150KΩ	½		BTS-150K	Horiz. AFC Cathode
R76	8200Ω	½		BTS-8200	Horiz. AFC Filter
R77	270KΩ 10%	1		BTA-270K	Horiz. AFC Plate
R78	100KΩ 5%	1		BTA-100K-5%	Horiz. Osc. Grid
R79	33KΩ 10%	1		BTA-33K	Horiz. Osc. Plate
R80	8200Ω	½		BTS-8200	Horiz. Osc. Coil Shunt
R81	22KΩ	½		BTS-22K	Horiz. Osc. Coil Shunt
R82	82KΩ	½		BTS-82K	Horiz. Feedback - See Note 5
R83	47Ω	½			Parasitic Suppressor
R84	1Meg	½		BTS-1Meg	Horiz. Output Grid
R85	100Ω	1		BTA-100	Horiz. Output Cathode - See Note 6
R86	4700Ω	2		BTB-4700	Horiz. Output Screen
R87	100KΩ 5%	1		BTA-100K-5%	Voltage Divider
R88	100KΩ 5%	1		BTA-100K-5%	Voltage Divider
R89	1Meg	2			HV Filter
R90A	1125Ω	20			Voltage Divider - Wire Wound
B	610Ω	20			Voltage Divider - Wire Wound
R91A	100Ω	2			Voltage Divider - Wire Wound
B	35Ω	1			Voltage Divider - Wire Wound
C	8200Ω	5			Voltage Divider - Wire Wound
R92	3300Ω	1		BTA-3300	Voltage Divider -
R93	10Ω	2		BW-2-10	Filter Network
R94	680Ω 10%	1		BW-1-680	Focus Coil Shunt - Wire Wound } See Note 5
R75	680Ω 10%	1		BW-1-680	Focus Coil Shunt - Wire Wound }
R96	390Ω 10%	2		BW-2-390	Focus Coil Shunt - Wire Wound - See Note 6
R97	100KΩ	1		BTA-100K	Isolation
R98	330KΩ	½		BTS-330K	Bias Network

♦ Items R63A, R63B, R63C. C59A, C59B, and C59C are combined into one unit.
Note 1 Some models use 39Ω resistor in this application.
Note 2 Some models use 560Ω resistor in this application.
Note 3 Some models use 100KΩ resistor in this application.
Note 4 Some models use 560KΩ resistor in this application.
Note 5 Some models use 1200Ω 2 watt resistor in place of R94 and R95
Note 6 Some models use parallel resistors in this application to obtain desired value.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC @ 2A	790VCT .250ADC	5VAC @ 3A	6.3VAC @ 6A			P-3070	TP-355
				SEC. 4 6.3VAC @ 9.8A				

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	180Ω	970Ω	TR-1473	A-8111 ①	A-3000 ①	TB0-1 ①	Vert. Block. Osc. Trans.
T3	450Ω Tap 76Ω	13Ω Taps .5Ω and 8Ω	TR-2273-1		HV0-6 ②		Horiz. Output Trans.
		SEC. 2 0Ω					
T4	640Ω	6.4Ω	TR-2189-A	A-8112 ①	A-3038	TB0-5	Vert. Output Trans.
T5A	12Ω			DY-7	MDF-70		Horiz. Deflection Coils
B	45Ω						Vert. Deflection Coils
T6	410Ω				MF-3		Focus Coil

① Drill one new mounting hole.
② Use MWC-1 for AGC winding.

OLYMPIC MODELS 762, 783, 967, 968, 970

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		OLYMPIC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T7	3.65KΩ	3.1Ω	270Ω	.5Ω	TR-1506	A-3856	A-2931	R0-9 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	OLYMPIC PART No.	JENSEN PART No.	QUAM PART No.	
SP1	PM	3.1Ω	SK1906-1	ST115 Model P8-V	8A31	
	CONE DIA.	V. C. DIA.				
SP2	7 3/8"	9/16				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	OLYMPIC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.250A	63Ω	2.1Henries	CK1346	C-2326	C-2991 ①	TR3300①	① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	OLYMPIC PART No.	MEISSNER PART No.	
L2	Ant. Coils	0Ω	0Ω			Part of Tuner No. CL-2262-1
L3	Fil. Choke	0Ω				Part of Tuner No. CL-2262-1
L4	RF, Mixer Grid and Osc. Coils	0Ω				Part of Tuner No. CL-2262-1
L5	Fil. Choke	0Ω				Part of Tuner No. CL-2262-1
L6	1st. Video IF	1Ω				Part of Tuner No. CL-2262-1
L7	Fil. Choke	0Ω				
L8	Fil. Choke	0Ω				
L9	2nd. Video IF	.3Ω	.1Ω	TR2117		WithSound Take-off
L10	Fil. Choke	0Ω				
L11	3rd. Video IF	.2Ω	.2Ω	CL2365		With Sound Trap (.1Ω)
L12	Fil. Choke	0Ω				
L13	4th. Video IF	.5Ω	.5Ω			
L14	Sound Trap	.1Ω	0Ω			
L15	Fil. Choke	0Ω				
L16	5th. Video IF	.2Ω	.2Ω	CL2364		With Sound Trap (.1Ω)
L17	Fil. Choke	0Ω				
L18	Peaking	5.5Ω			19-1921 †	120 Microhenries-wound on 22KΩ resistor (Blue Dot)
L19	Peaking	7.8Ω			19-1922	250 Microhenries (Green Dot)
L20	4.5MC Trap	2Ω				
L21	Peaking	5.5Ω			19-1921 †	120 Microhenries-wound on 22KΩ resistor (Blue Dot)
L22	1st. Sound IF	.2Ω				
L23	Disc. Trans.	.1Ω	.1Ω	TR1469		Tap .1Ω
L24	Horiz. Osc.	75Ω	46Ω	TR2294		
L25	Horiz. Width	.6Ω				
L26	Horiz. Lin.	36Ω				

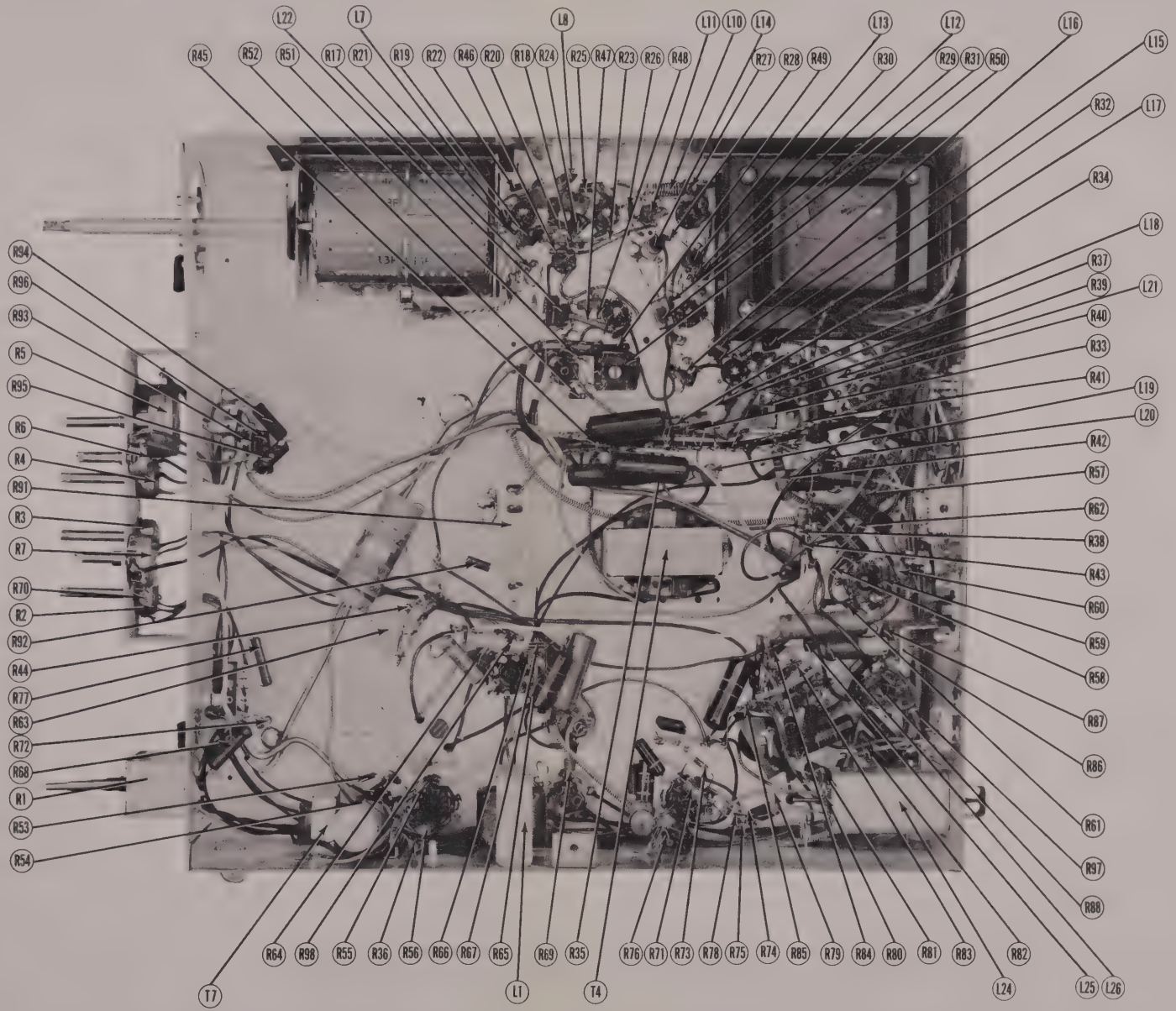
† Parallel with 22KΩ resistor

FUSES

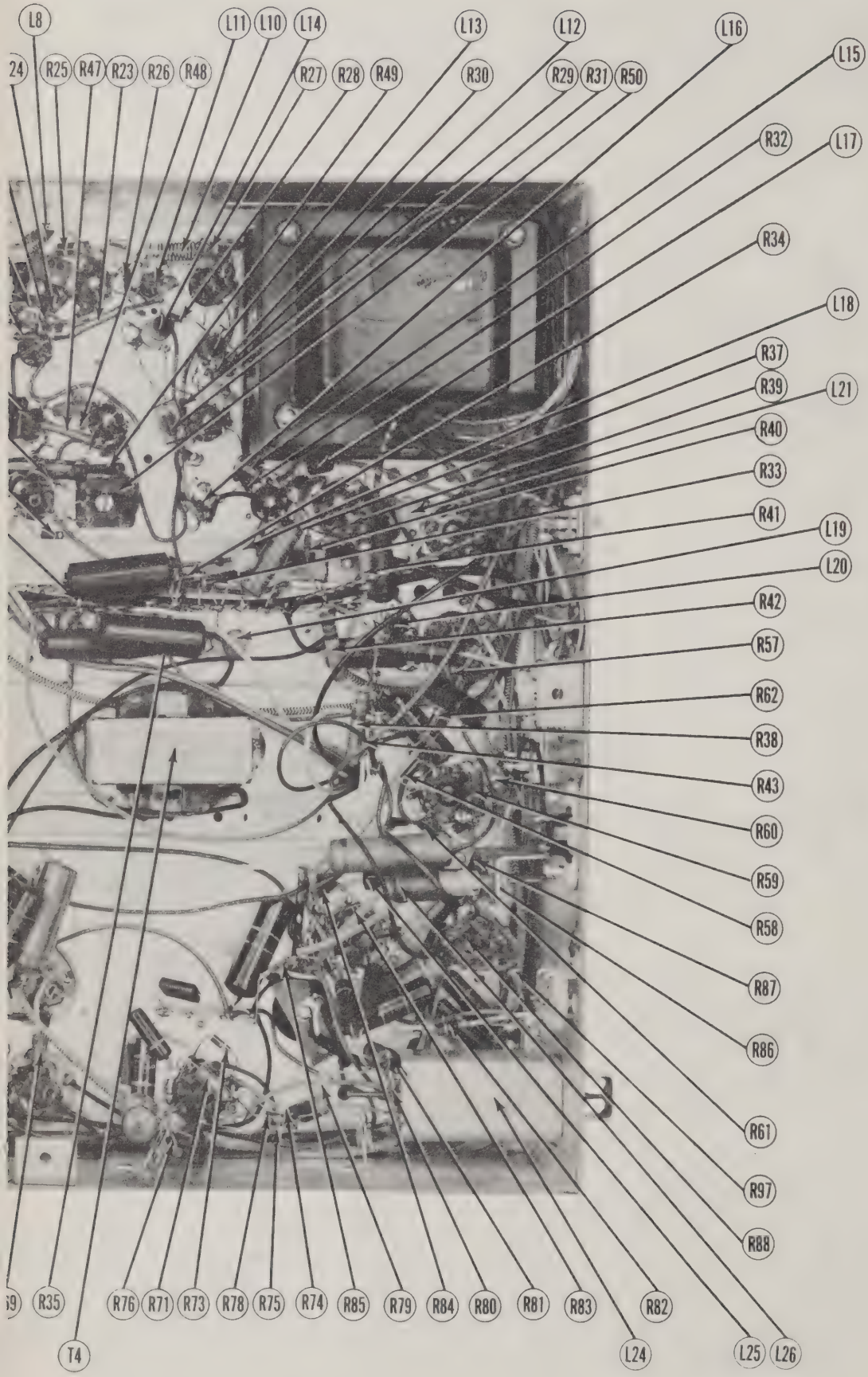
ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			OLYMPIC PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG Pigtail	.250			318.250		

MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
M2	RF Tuner	CL-2262-1	
M3	Switch		TV-Phono
M4	Switch		(Local and Fringe)
M5	Ion Trap		
B3	Trimmer		Horiz. Lock (10-160MMF)
B5	Trimmer		Horiz. Drive (50-370MMF)



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



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PHOTOFACT* Folder

RCA VICTOR MODEL 4T101 (Ch. KCS61), 4T141 (Ch. KCS62 and RADIO Ch. RC1090)

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MODEL 4T41

RCA VICTOR MODEL 4T101 (Ch. KCS61), 4T141 (Ch. KCS62 and RADIO Ch. RC1090)

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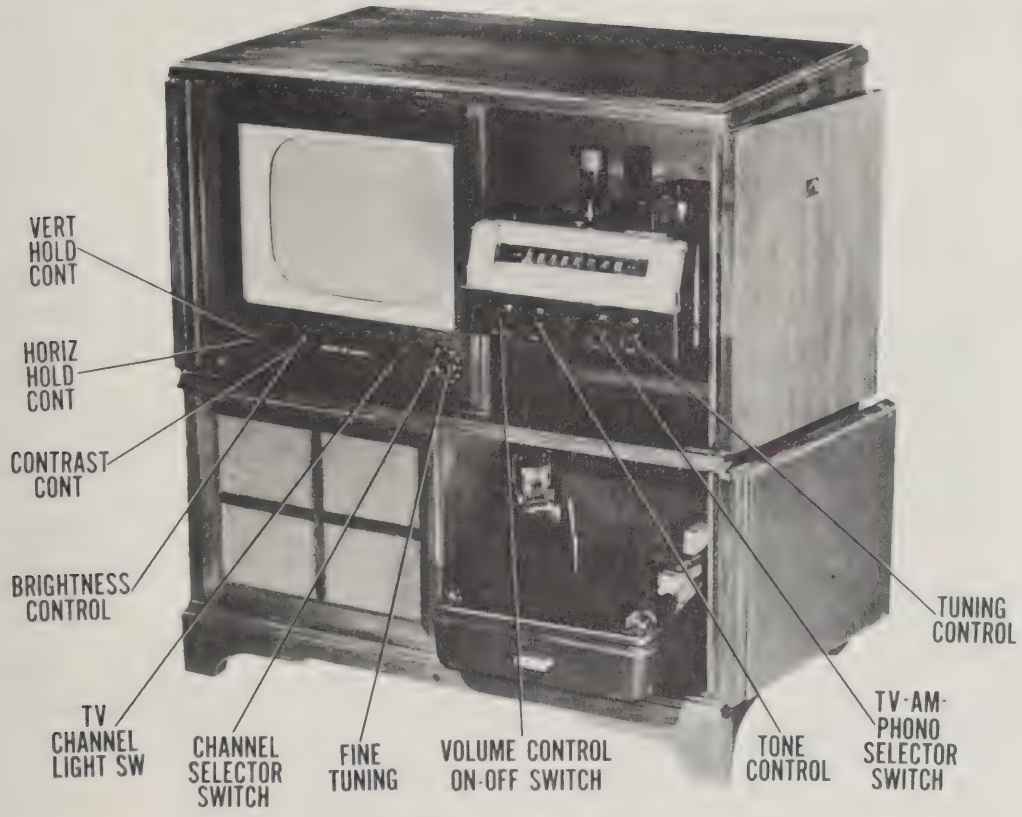

RCA VICTOR MODEL 4T141

TRADE NAME	RCA Victor, Models 4T101 (Ch. KCS61), 4T141 (Ch. KCS62 And Radio Chassis RC1090)
MANUFACTURER	RCA Victor Div., Radio Corp., of America, Camden, N.J.
TYPE SET	TV-AM-Phono Combination Receiver (Model 4T101 TV "Only")
TUBES	Twenty Eight (Model 4T141) Twenty One (Model 4T101)
POWER SUPPLY	110-120 Volts AC - 60 Cycle
RATINGS	(TV) 1.4 Amp. @ 117 Volts AC (Radio) .375 Amp. @ 117 Volts AC
TUNING RANGE	(TV) Channels 2 thru 13 (AM) 535 - 1620KC

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RECORD CHANGER UNITS - 45 RPM - MODEL RP-190
33 1/3 - 78 RPM - MODEL 960282 - SEE SIMILAR UNIT IN PHOTOFACT FOLDER #7 - SET # 72 OR RECORD CHANGER MANUAL CM-3.

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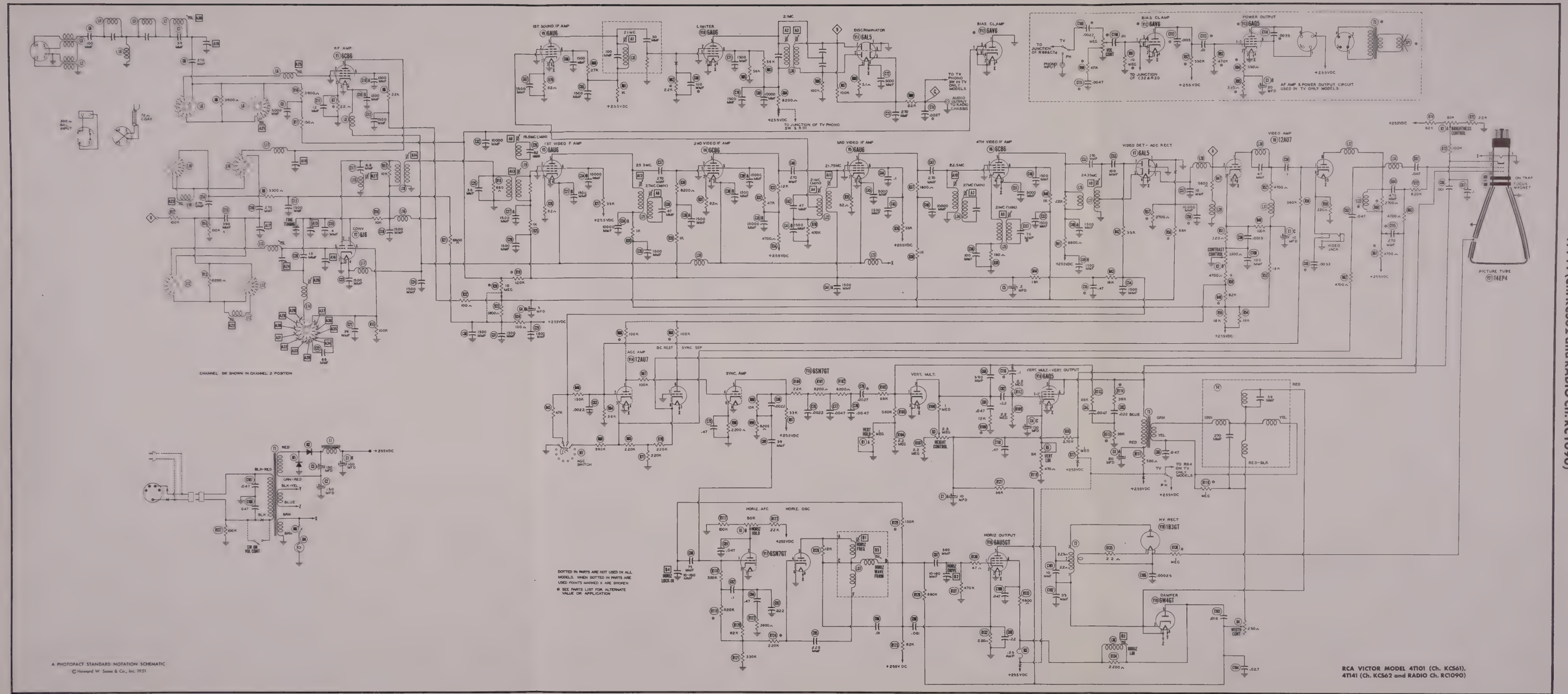

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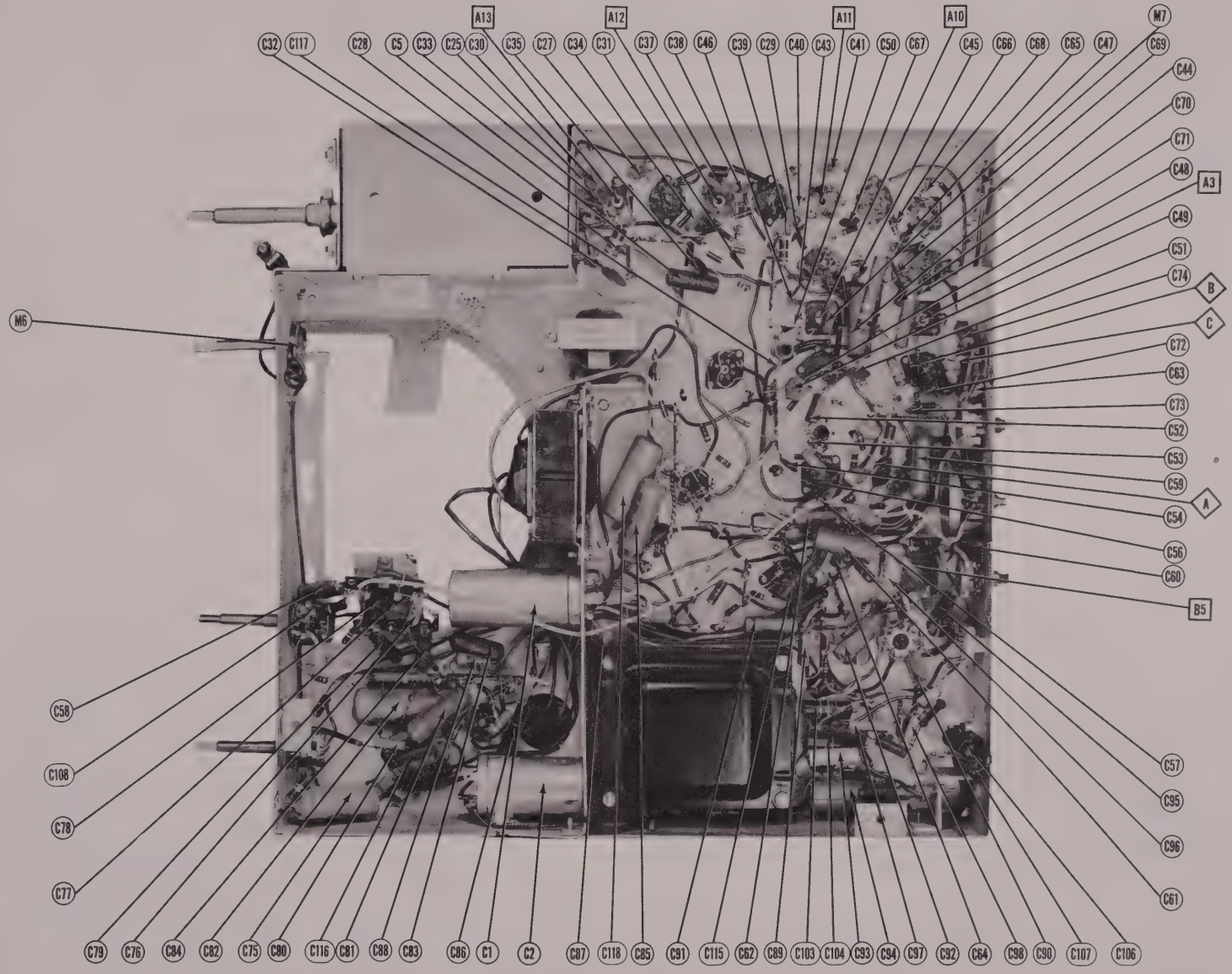
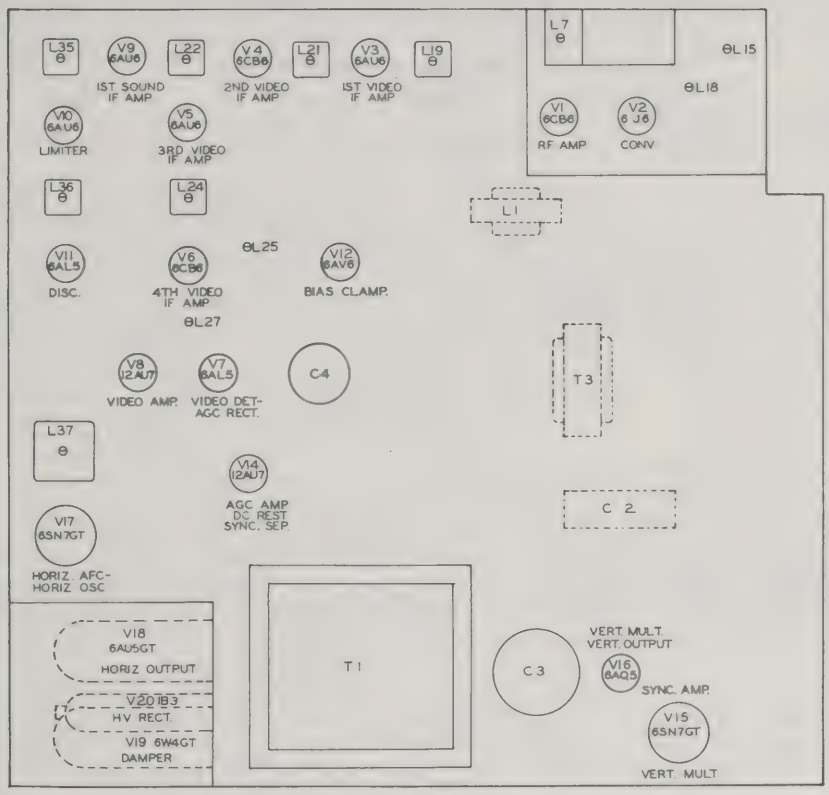
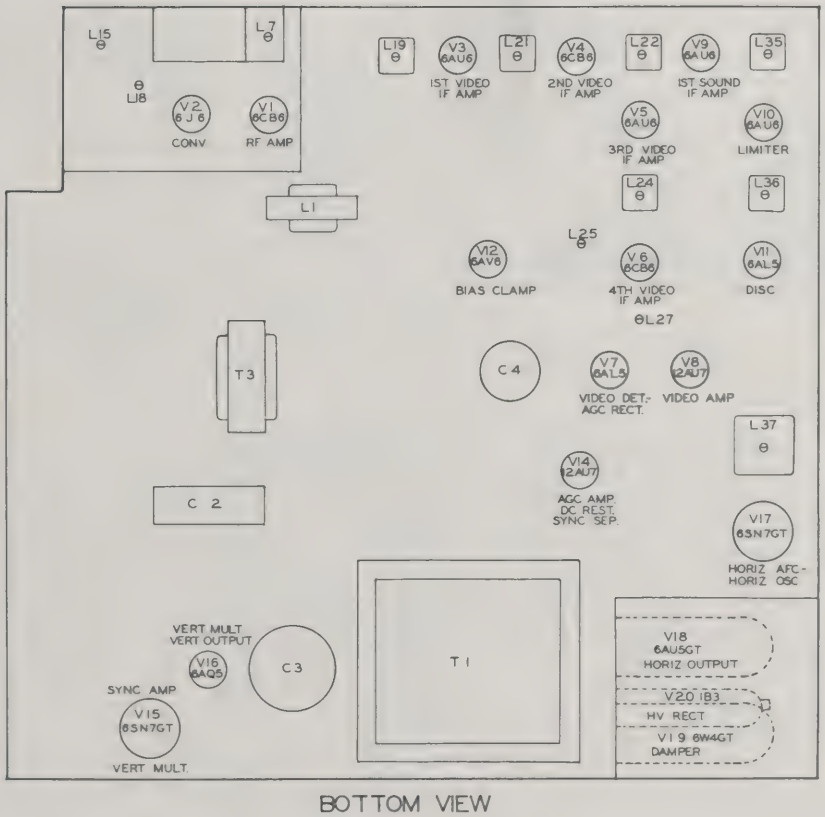
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube, (V17), from its socket.
Remove the converter tube, (V2), and replace it with a 6J6 which has Pin 1 removed. This will disable the local oscillator and prevent the possibility of erroneous indications.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	.001MFD	High side to Pin 1 (grid) of 6AU6, (V9). Low side to chassis.	21MC (Unmod.)	Any	DC probe thru 1 meg to Point (A). Common to chassis.	A1, A2	Detune A3 several turns counter-clockwise. Adjust A1 and A2 for maximum deflection.
2.	"	"	"	"	DC probe to Point (B). Common to chassis.	A3	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.001MFD	High side to Pin 1 (grid) of 6AU6, (V9). Low side to chassis.	21MC (450KC SWP)	21MC	Any	Vert. amp. thru 22KΩ to Point (A). Low side to chassis.	A1, A2	Adjust for maximum amplitude and symmetry as per figure 1.
2.	"	"	"	"	"	Vert. amp. to Point (B). Low side to chassis.	A3	Adjust A3 so 21MC occurs at center of cross-over lines as per figure 2. SLIGHTLY re-touch A2 for maximum amplitude and straightness of crossover lines.

VIDEO IF ALIGNMENT

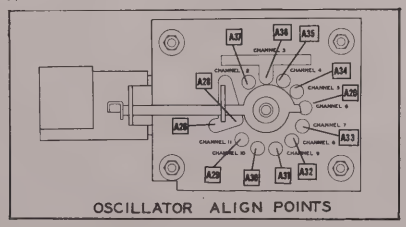
Turn the AGC switch to maximum counter-clockwise.
Connect the negative lead of a 3 volt battery to the ungrounded lead of C5, connect the positive lead to chassis.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to terminal "D" of L19. Low side to chassis.	Not used	21.0MC (Unmod.)	Any	USE VTVM DC probe to Point (C) Common to chassis.	A4, A5	Adjust for MINIMUM deflection.
4.	"	"	"	27MC	"	"	A6, A7	"
5.	"	"	"	19.5MC	"	"	A8	"
6.	"	"	"	24.35MC	"	"	A9	Adjust for maximum deflection.
7.	"	"	"	22.5MC	"	"	A10	"
8.	"	"	"	21.75MC	"	"	A 11	"
9.	"	"	"	25.3MC	"	"	A12	"
10.	"	High side to an unground-ed tube shield floating over dummy converter tube, (V2). Low side to chassis.	24MC (10MC SWP)	22.3MC 25.4MC	"	Vert. amp. to Point (C) Low side to chassis.	A13, A14	Connect 330Ω resistors across L21, L22, L24, and L27. Reduce bias to -1 volt. Adjust for response curve similar to figure 3. Remove 330Ω resistors.
11.	"	"	"	21.85MC 24.75MC	"	"		Increase the bias to -4.5 volt. Check for response curve similar to figure 4. If necessary retouch A9 thru A14 for proper response.

RF TUNER ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Disconnect the co-ax link from terminal 2 of the tuner terminal board and connect a 39Ω resistor across terminals 1 and 2. Loosely couple the link to terminal 2 of the terminal board.
Connect the negative lead of a 3 volt battery to terminal 3 of the tuner terminal board, connect the positive lead to chassis.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
12.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	Not used	215.75MC	13	VTVM DC probe to Point (B). Common to chassis.	A15	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
13.	"	"	183MC (10MC SWP)	181.25MC 185.75MC	8	SCOPE Vert. amp. to Point (D). Low side to chassis.	A16, A17, A18, A19	Adjust for response curve with bandwidth shown in figure 5.
14.	"	"	Not used	87.75MC	6	VTVM DC probe to Point (B) Common to chassis.	A20	Adjust for zero as in step 12.
15.	"	"	85MC (10MC SWP)	83.25MC 87.75MC	6	SCOPE Vert. amp. to Point (D). Low side to chassis.	A21, A22, A23	Adjust for response curve similar to figure 5.



OSCILLATOR ALIGN POINTS

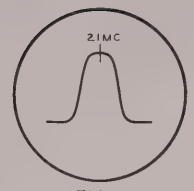


FIG. 1

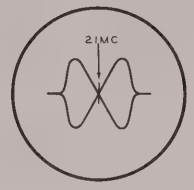


FIG. 2

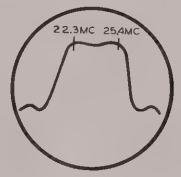


FIG. 3

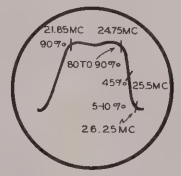


FIG. 4

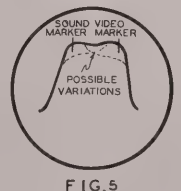


FIG. 5

TV ALIGNMENT INSTRUCTIONS (CONT.)

16.	Connect VTVM to Point (D) and adjust A24 for -3 volt reading. If necessary retouch A21, A22, A23 and A17 for proper response on channel 6. Repeat these retouching adjustments until proper response is obtained with -3 volt reading at Point (D).							
17.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	Not used	185.75MC	8	VTVM DC probe to Point (B). Common to chassis.	A15	Adjust for zero as in step 12.
18.	"	"	183MC (10MC SWP)	181.25MC 185.75MC	8	SCOPE Vert. amp. to Point (D). Low side to chassis.		Retouch A16, A17 and A19 for response curve, frequency and bandwidth shown in figure 5.
19.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"	A25	Adjust for maximum amplitude of response midway between the markers. Then overshoot the adjustment by turning the slug in the same direction a small amount farther than necessary. Adjust A19 for maximum amplitude.
20.	"	"	Not used	215.75MC	13	VTVM DC probe to Point (B). Common to chassis.	A26	Adjust for zero reading as in step 12. Then overshoot the adjustment as in step 20. Adjust A15 to reset the oscillator to the proper frequency.
21.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	SCOPE Vert. amp. to Point (D). Low side to chassis.		Check all high band channels for proper response with markers above 80%. If markers do not appear above 80%. Repeat step 14. If A19 is adjusted, the adjustment should be overshot a small amount and compensated for by adjusting A25 for maximum amplitude between the sound and video markers. If the valley in the top of the curves on the high channels seems deeper than normal, adjust A27 to flatten the center portion of the curve. In later productions A27 may be fixed and not require adjustment.
22.	Check the oscillator frequency for the high band channels. If the oscillator is off frequency, over shoot the adjustment of A15 and compensate for it by adjusting A26 for zero voltage at Point (B).							
23.	Repeat step 15.							
24.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	85MC (10MC SWP)	83.25MC 87.75MC	6	SCOPE Vert. amp. to Point (D). Low side to chassis.		Check for response curve similar to figure 5. If necessary retouch A21, A22 and A23 for proper response.
25.	Check the voltage at Point D. If necessary adjust A24 for -3 volt reading. If A24 is adjusted turn channel selector to channel 8 and readjust A16 for proper response.							
26.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	85MC (10MC SWP)	83.25MC 87.75MC	6	SCOPE Vert. amp. to Point (D). Low side to chassis.		Check all low band channels for response similar to figure 5, and the injection voltage at Point D, which should be - 3 volts. Also recheck channels 7 thru 13.
27.	"	"	Not used	215.75MC	13	VTVM DC probe to Point (B). Common to chassis.		If necessary adjust A15 for zero voltage as in step 12.
28.	"	"	"	209.75MC	12	"	A28	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
				203.75MC	11		A29	
				197.75MC	10		A30	
				191.75MC	9		A31	
				185.75MC	8		A32	
				179.75MC	7		A33	
				87.75MC	6		A20	
				81.75MC	5		A34	
				71.75MC	4		A35	
				65.75MC	3		A36	
				59.75MC	2		A37	
29.	Turn the channel switch to channel 8 and adjust A24 for proper response. When A24 is properly adjusted the curve will be slightly wider with a slightly deeper valley in the center. Check all channels for: (1) proper response, (2) oscillator injection voltage at Point D, and (3) oscillator frequency. Make slight touch adjustments if necessary. If A16 and A24 are changed considerably, retouch the oscillator frequency on all channels.							
30.	Disconnect the 39Ω resistor from terminals 1 and 2 on the terminal strip and reconnect the co-ax link. Repeat steps 11 and 12 of Video IF Alignment.							

RADIO ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer, turn tuning gang fully closed and set pointer to the index mark near the left hand end of the dial backplate.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
The alternate loading refered to in the alignment table is accomplished by connecting a 47KΩ resistor across the primary winding of the transformer, while the secondary of the same transformer is being adjusted. While adjusting the primary of the transformer the 47KΩ resistor is moved to across the secondary.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
31.	.01MFD	High side to stator on rear section of tuning gang. Low side to chassis.	455KC (400% Mod.)	AM	Tuning gang fully closed.	Across voice coil.	A39, A40, A41, A42	Adjust for maximum output. Then repeat the adjustments using alternate loading as described above.
32.		Loop	1620KC	"	Tuning gang fully open	"	A43	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
33.		Loop	1400KC	"	Tune for max. output.	"	A44	"
34.		Loop	600KC	"	600KC	"	A45	Rock tuning gang while adjusting for maximum output.

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	-.4VDC	.2VDC	0V	6.2VAC	155VDC	85VDC	0V		
V 2	6J6	80VDC	130VDC	0V	6.2VAC	-3VDC	§-2.6VDC	0V		
V 3	6AU6	-.2VDC	0V	0V	6.2VAC	100VDC	160VDC	.8VDC		
V 4	6CB6	-.2VDC	.5VDC	6.2VAC	0V	125VDC	115VDC	0V		
V 5	6AU6	-.2VDC	0V	0V	6.2VAC	80VDC	155VDC	.8VDC		
V 6	6CB6	0V	2.2VDC	6.3VAC	0V	185VDC	135VDC	0V		
V 7	6AL5	6.8VDC	-.4VDC	6.3VAC	0V	0V	0V	0V		
V 8	12AU7	75VDC	-.4VDC	4.2VDC	6.3VAC	6.3VAC	170VDC	0V	3VDC	0V
V 9	6AU6	0V	0V	0V	6.3VAC	245VDC	150VDC	.9VDC		
V 10	6AU6	-.5VDC	0V	0V	6.3VAC	200VDC	65VDC	0V		
V 11	6AL5	0V	-1.4VDC	1.3VAC	6.3VAC	-1.4VDC	0V	0V		
V 12	6AV6	-.6VDC	0V	0V	6.3VAC	0V	0V	0V		
V 13	6AQ5	NOT USED IN ALL MODELS								
V 14	12AU7	2.6VDC	0V	1.3VDC	6.3VAC	6.3VAC	4VDC	0V	1.5VDC	0V
V 15	6SN7GT	-9.2VDC	70VDC 185VDC	0V	4VDC	65VDC	6.7VDC	6.3VAC	0V	
V 16	6AQ5	0V	22VDC	0V	6.3VAC	250VDC	250VDC	0V		
V 17	6SN7GT	-1.4VDC	140VDC	3.6VDC	-43VDC	175VDC	0V	0V	6.3VAC	
V 18	6AU5GT	0V	0V	21VDC	0V	*	0V	6.3VAC	190VDC	
V 19	6W4GT	0V	0V	420VDC	0V	255VDC	0V	420VDC	420VDC	
V 20	1B3GT	* DO NOT MEASURE								
V 21	14EP4	0V	.4VDC	PIN 10 400VDC	PIN 11 125VDC	PIN 12 6.3VAC				

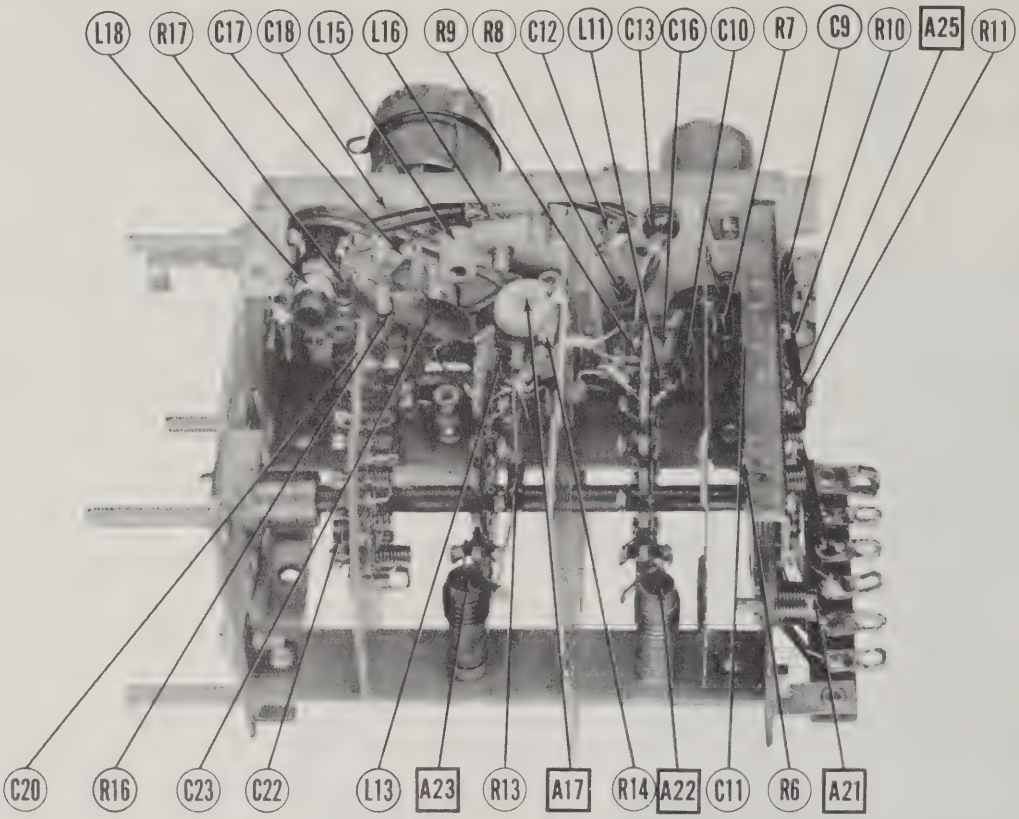
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
FUNCTION SWITCH IN TV POSITION
AGC SWITCH FULLY CLOCKWISE
* DO NOT MEASURE
§ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

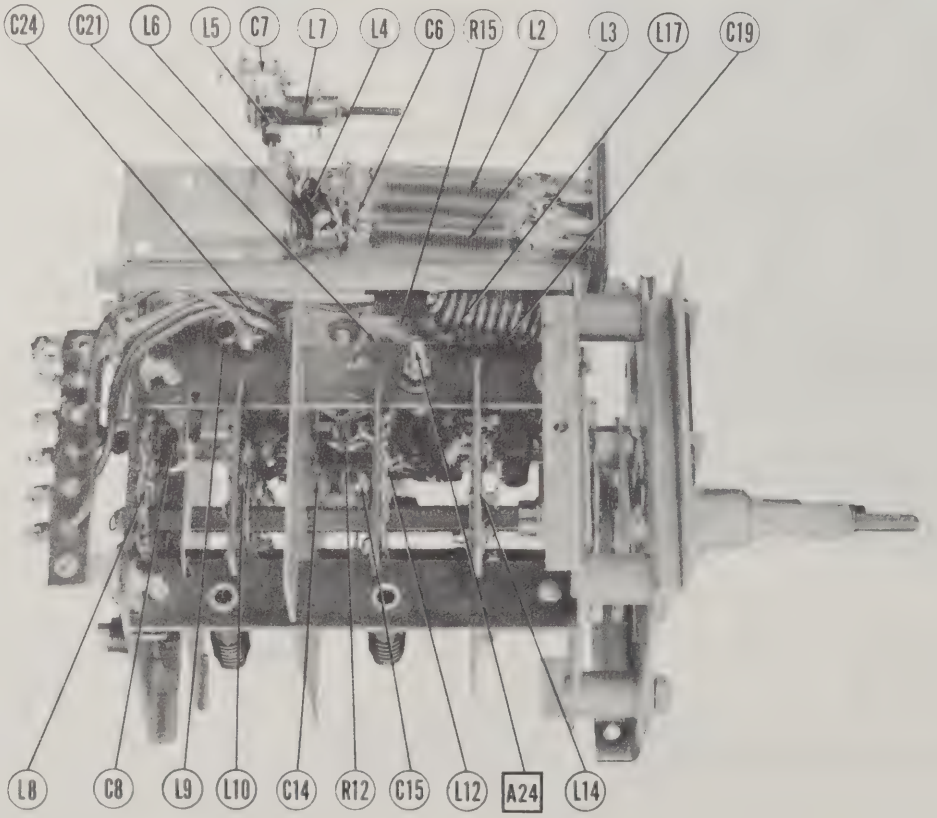
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	190KΩ	22Ω	0Ω	.1Ω	†10KΩ	†28KΩ	0Ω		
V 2	6J6	†16KΩ	†5.6KΩ	0Ω	.1Ω	100KΩ	100KΩ	0Ω		
V 3	6AU6	39KΩ	0Ω	0Ω	.1Ω	†10KΩ	†33KΩ	82Ω		
V 4	6CB6	41KΩ	82Ω	.1Ω	0Ω	†17KΩ	†52KΩ	0Ω		
V 5	6AU6	35KΩ	0Ω	0Ω	.1Ω	†12KΩ	†33KΩ	82Ω		
V 6	6CB6	.1Ω	180Ω	.1Ω	0Ω	†6.9KΩ	†6.7KΩ	0Ω		
V 7	6AL5	2.7KΩ	5.6KΩ	.1Ω	0Ω	.1Ω	0Ω	30KΩ		
V 8	12AU7	†32KΩ	5.6KΩ	3.7KΩ	.1Ω	.1Ω	†7.4KΩ	600KΩ	220Ω	0Ω
V 9	6AU6	470KΩ	0Ω	0Ω	.1Ω	†1KΩ	†28KΩ	82Ω		
V 10	6AU6	22KΩ	0Ω	0Ω	.1Ω	†8.2KΩ	†32KΩ	0Ω		
V 11	6AL5	0Ω	100KΩ	2.5Ω	.1Ω	200KΩ	0Ω	100KΩ		
V 12	6AV6	130KΩ	0Ω	0Ω	.1Ω	0Ω	0Ω	0Ω		
V 13	6AQ5	NOT USED IN ALL MODELS								
V 14	12AU7	†200KΩ	39KΩ	225KΩ	.1Ω	.1Ω	†100KΩ	0Ω	440KΩ	0Ω
V 15	6SN7GT	1.3Meg	†2.3 Meg †1.4 Meg	0Ω	†100KΩ	†17KΩ	2.2KΩ	.1Ω	0Ω	
V 16	6AQ5	2.2Meg	5.4KΩ 470Ω	0Ω	.1Ω	†1.1KΩ	†1.1KΩ	2.2Meg		
V 17	6SN7GT	1.5Meg	†40KΩ	410KΩ	550KΩ	†82KΩ	0Ω	0Ω	.1Ω	
V 18	6AU5GT	470KΩ	0Ω	220Ω	Inf.	#22Ω	Inf.	.1Ω	†6.8KΩ	
V 19	6W4GT	Inf.	Inf.	†250KΩ	Inf.	†91Ω	Inf.	#0Ω	#.2Ω	
V 20	1B3GT	PINS 1 THRU 8 INFINITE RESISTANCE								TOP CAP #225Ω
V 21	14EP4	0Ω	1.2Meg	PIN 10 †400KΩ	PIN 11 170KΩ	PIN 12 .1Ω				

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
FUNCTION SWITCH IN TV POSITION
AGC SWITCH FULLY CLOCKWISE
† MEASURED FROM PLUS SIDE OF M2
# MEASURED FROM PIN 3 OF V 19

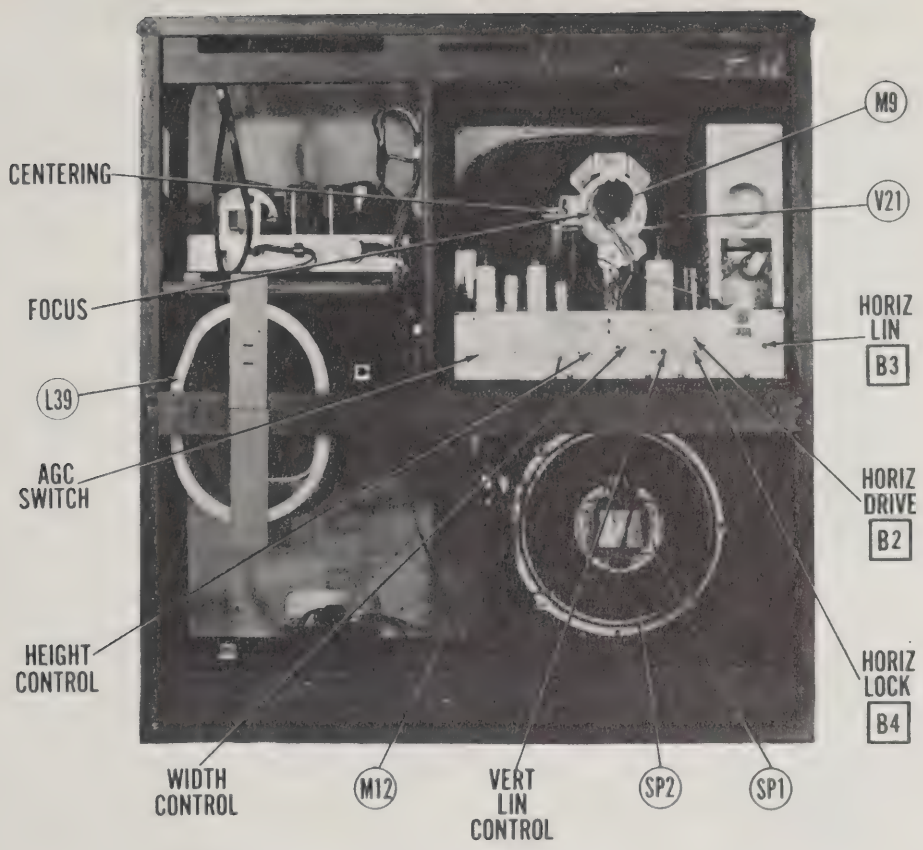
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



CABINET-REAR VIEW

MISCELLANEOUS ADJUSTMENT

HORIZONTAL SWEEP CIRCUIT ADJUSTMENT

Connect a short between terminals C and D of L37.
Turn the set on and tune in a TV station, preferably a test pattern.
Turn the horizontal hold control to maximum clockwise and adjust the horizontal frequency slug, (B1) until the blanking signal appears as a single vertical line in the picture.
Turn the hold control 1/4 turn counter-clockwise to synchronize the picture.
Adjust the horizontal drive trimmer (B2) clockwise as far as possible without crowding the right side of the picture.
Adjust the width control until picture is of proper width.
Adjust the horizontal linearity slug (B3) until the picture is symmetrical from left to right, slight readjustment of B2 may be required for optimum results.
Turn the hold control fully counter-clockwise and interrupt the signal by switching to another channel and back again.
Turn the hold control clockwise and note the least number of bars present just before the picture pulls into synchronization.
Adjust the horizontal locking trimmer (B4) until 7 to 9 bars are present just before pull in.

HORIZONTAL WAVEFORM ADJUSTMENT

Remove the short from terminals C and D of L37.
Turn the horizontal hold control fully clockwise and adjust the waveform slug (B5) until the blanking signal appears as a single vertical line in the raster.
Turn the hold control 1/4 turn counter-clockwise to synchronize the picture.
Connect the vertical input of an oscilloscope to terminal C of L37.
Adjust the horizontal waveform slug (B5) until the broad and narrow peaks of the waveform are of equal height as shown in figure 6. If neccessary during adjustment of B5 turn the hold control to keep the picture in synchronization.
Turn the hold control to maximum counter-clockwise and momentarily remove the signal. Adjust B4 until two bars are present just before the picture pulls into synchronization as the hold control is turned clockwise.
Turn the hold control 1/4 turn counter-clockwise to synchronize the picture.

AGC SWITCH ADJUSTMENT

In a strong signal area the normal position of the switch is counter-clockwise. If interference of the impulse type is encountered turn the switch to the center position. In very weak signal areas, turn the switch clockwise.

FM TRAP ADJUSTMENT

If interference is encountered from a strong FM station signal it may be possible to eleminate it by adjusting A38. Adjust A38 for minimum interference in the picture.

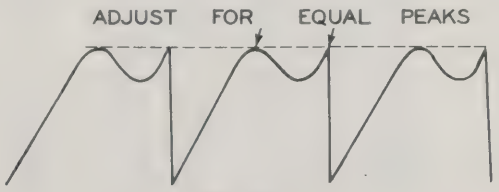


FIG. 6

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA VICTOR PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6CB6	6CB6	6CK	
V2	Converter	6J6	6J6	7BF	
V3	1st Video IF Amp.	6AU6	6AU6	7BK	
V4	2nd Video IF Amp.	6CB6	6CB6	6CK	
V5	3rd Video IF Amp.	6AU6	6AU6	7BK	
V6	4th Video IF Amp.	6CB6	6CB6	6CK	
V7	Video Detector - AGC Rectifier	6AL5	6AL5	6BT	
V8	Video Amplifier	12AU7	12AU7	9A	
V9	1st Sound IF Amp.	6AU6	6AU6	7BK	
V10	Limiter	6AU6	6AU6	7BK	
V11	Discriminator	6AL5	6AL5	6BT	
V12	Bias Clamp	6AV6	6AV6	7BT	Also 1st AF Amp. on Model 4T101
V13	Power Output	6AQ5	6AQ5	7BZ	Used in Model 4T101 Only
V14	AGC Amplifier - DC Restorer - Sync. Separator	12AU7	12AU7	9A	
V15	Sync. Amplifier - Vertical Mult.	6SN7GT	6SN7GT	8BD	
V16	Vertical Mult .	6AQ5	6AQ5	7BZ	
V17	Horiz. AFC - Horiz. Oscillator	6SN7GT	6SN7GT	8BD	
V18	Horiz. Output	6AU5GT	6AU5GT	6CK	
V19	Damper	6W4GT	6W4GT	4CG	
V20	H.V. Rectifier	1B3GT	1B3GT	3C	
V21	Picture Tube	14EP4	14EP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RCA VICTOR PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	10	450	75219	AFH2J202H4A		UPT419		TVL-4706	▲ Decoupling
B	100	350							■ Filter
C	10	350							▲ Decoupling
D	20	25							Not Used
C2	150	200	75220	E4A85		UPE15020		TVL-1540	Filter
C3	150	200	75220	E4A85		UPE15020		TVL-1540	Filter
C4A	20	350	76142	AFH41H30B		UPT316		TVL-3638	■ Vert. Output Decoupling
B	5	350							▲ Decoupling
C	150	50							Vert. Output Cathode
C5	2	50	73747	E26F3		BBR2-50T		TVA-1301	AGC Filter
C6	100		75437	SI100	D6-101		GP2K-101	19C11	RF Coupling
C7	39		75450		TCN-39		N750K-390		Fixed Trimmer
C8	270		75199	SI270	D6-271		GP2K-271	19C31	RF Coupling
C9	5000		73473	SI5000	D6-502		GP2-333-502	29C1	AGC Filter
C10A	1500		75089	BPD-2X0015	DD-2-152		812-0015	29C6	RF Amp. Screen
B	1500								RF Amp. Fil.
C11	12		75200		TCZ-12		NPOK-120		RF Amp. Cathode
C12	1500		75166	SI1500	D6-152		GP2L-152	29C8	RF Bypass
C13	1500		75166	SI1500	D6-152		GP2L-152	29C8	RF Bypass
C14	270		75199	SI270	D6-271		GP2K-271	19C31	RF Coupling
C15	390		75641	SI390	D6-391		GP2K-391		RF Coupling
C16	270		75199	SI270	D6-271		GP2K-271	19C31	RF Coupling
C17	6.8		75197	SI6.8NPO	TCZ-6.8		NPOK-6R8		Fixed Trimmer
C18	1500		75166	SI1500	D6-152		GP2L-152	29C8	Conv. Decoupling
C19	4		75289						Fixed Trimmer
C20	15		45465		TCZ-15		NPOK-150	19C5	Osc. Feedback
C21	39		75196		TCN-39		N750K-390		Fixed Trimmer
C22	.68		71504		TCZ-.68		NPOK-R68		Fixed Trimmer
C23	1500		73748	SI1500	D6-152		GP2L-152	29C8	Conv. Fil.
C24	1500		75166	SI1500	D6-152		GP2L-152	29C8	Fil. Bypass
C25	56		71924		TCN-56		N750K-560		Fixed Trimmer
C26	82				TCZ-82		NPO-333-820		Fixed Trimmer
C27A	1500		75089	BPD-2X0015	DD-2-152	1W5D15	812-0015	29C6	AGC Filter
B	1500					1W5D15			1st Video IF Fil.
C28	1500		73748	BPD-0015	DD-152	1W5D15	801-0015	29C8	AGC Filter
C29	1500		73748	BPD-0015	DD-152	1W5D15	801-0015	29C8	RF Bypass
C30	1500		73748	BPD-0015	DD-152	1W5D15	801-0015	29C8	RF Bypass
C31	1500		73748	BPD-0015	DD-152	1W5D15	801-0015	29C8	RF Bypass
C32	10000		73960	BPD-01	DD-103	1D3S1	821-01	36C1	AGC Filter
C33	1500		73748	BPD-0015	DD-152	1W5D15	801-0015	29C8	Decoupling
C34A	10000		75877	SI10000	DD-3-103	1D3S1	821-01	36C1	1st Video IF Plate
B	10000			SI10000		1D3S1	821-01	36C1	1st Video IF Screen
C35	1500		73748	BPD-0015	DD-152	1W5D15	801-0015	29C8	RF Bypass
C36	47				TCZ-47		NPO-333-470	29C14	Fixed Trimmer
C37	270	1000	73091	1468-00025	D6-271	5W5T25	GP2K-271	19C31	IF Coupling
C38A	1500		75089	BPD-2X0015	DD-2-152	1W5D15	812-0015	29C6	AGC Filter
B	1500					1W5D15			2nd Video IF Fil.
C39A	10000		75877	SI10000	DD-3-103	1D3S1	821-01	36C1	2nd Video IF Screen
B	10000			SI10000		1D3S1	821-01	36C1	2nd Video IF Dec.
C40	270	1000	73091	1468-00025	D6-271	5W5T25	GP2K-271	19C31	IF Coupling
C41A	1500		75089	BPD-2X0015	DD-2-152	1W5D15	812-0015	29C6	AGC Filter
B	1500					1W5D15			Sound IF Grid
C42	47			SI47	D6-470	5W5Q5	GP1K-470	19C25	Fixed Trimmer
C43	1500		73748	BPD-0015	DD-152	1W5D15	801-0015	29C8	3rd Video IF Screen
C44	.1	400	73551	P488-1	DF-104	PTE4P1		4TM-P1	3rd Video IF Screen
C45	5000		73473	BPD-005	DD-502	1D5D5	811-005	29C1	3rd Video IF Fil.
C46	10000		73960	BPD-01	DD-103	1D3S1	821-01	36C1	3rd Video IF Plate
C47	270	1000	73091	1468-00025	D6-271	5W5T25	GP2K-271	19C31	IF Coupling
C48	1500		73748	BPD-0015	DD-152	1W5D15	801-0015	29C8	4th Video IF Screen
C49A	1500		75089	BPD-2X0015	DD-2-152	1W5D15	812-0015	29C6	4th Video IF Plate
B	1500					1W5D15			RF Bypass
C50	100		45469	SI100NPO	TCZ-100		NPO-333-101	36C10	4th Video IF Cathode
C51	5000		73473	BPD-005	DD-502	1D5D5	811-005	29C1	4th Video IF Fil.
C52	270	1000	73091	SI270	D6-271	5W5T25	GP2K-271	19C31	IF Coupling
C53	100		39369	SI100	D6-101	5W5T1	GP1K-101	19C11	IF Coupling
C54	1500		73748	BPD-0015	DD-152	1W5D15	801-0015	29C8	AGC Filter
C55	.47	200	73787	P288-47		GT4P5		2TM-P47	AGC Filter †
C56	10000			BPD-01	DD-103	1D3S1	821-01	36C1	AGC Filter †
C57	10		73511	SI10NPO	TCZ-10		NPOK-100	19C3	Diode Load Cap
C58	.0015	600	73598	P688-0015	D6-152	PTE6D2	GP2L-152	6TM-S15	Video Amp. Cathode

TV PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA RCA VICTOR PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C59	.1	400	73551	P488-1	DF-104	PTE4P1		4TM-P1	Video Coupling
C60	.0033	600	73759	P688-0033	D6-332	PTE6D3	GP2-333-332	29C19	Video Amp. Cathode †
C61	.047	400	73553	P488-047	DF-503	PTE4S5		4TM-S47	Video Coupling
C62	.047	400	73553	P488-047	DF-503	PTE4S5		4TM-S47	Video Coupling
C63	.0022	600	73595	P688-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	AGC Amp. Grid
C64	470		75198	SI470	D6-471	5R5T5	GP2K-271	19C15	Sync. Coupling
C65	1500		75166	SI1500	D6-152	1W5D15	GP2L-152	29C8	Sound IF Plate
C66	1500		75166	SI1500	D6-152	1W5D15	GP2L-152	29C8	Sound IF Screen
C67	1500		73748	BPD-0015	DD-152	1W5D15	801-0015	29C8	Sound IF Cathode
C68	100			SI100N750	TCN-100		N750L-101		Limiter Grid †
C69	10000		73960	BPD-01	DD-103	1D3S1	821001	36C1	RF Bypass
C70	1500		75166	SI1500	D6-152	1W5D15	GP2L-152	29C8	Limiter Plate
C71	1500		75166	SI1500	D6-152	1W5D15	GP2L-152	29C8	Limiter Screen
C72	5000		73473	BPD-005	DD-502	1D5D5	811-005	29C1	Disc. Fil.
C73	270		75244	SI270	D6-271	5W5T25	GP2K-271	19C31	RF Bypass
C74	.0027	600		P688-001	D6-272	PTE6D1	GP2-333-272	6TM-D1	De-emphasis *
C75	.47	200	73787	P288-47		GT2P5		2TM-P47	Sync. Amp. Cathode
C76	.0022	600	73595	P688-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	Integrator Net
C77	.0047	600	73920	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Integrator Net
C78	.0047	600	73920	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Integrator Net
C79	.0027	600		P688-001	D6-102	PTE6D1	GP2-333-272	6TM-D1	Integrator Net *
C80	390	500	73094	1469-0004	D6-391	5R5T4	GP2K-391	MS-34	Vert. Feedback
C81	.047	600	73592	P688-047	DF-503	PTE6S5		6TM-S47	Vert. Discharge
C82	.22	600	74957	684-25		GP6P25		6TM-P25	Vert. Sweep Coupling
C83	.022	600	73798	P688-022	DF-203	PTE6S2		6TM-S22	Vert. Feedback
C84	.0047	600	73920	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Vert. Feedback
C85	.047	1000	73597	P1088-047		GT16S5		MB-S5	RF Bypass
C86	.001	1000	75344	P1088-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Vert. Sweep Coupling
C87	.1	400	73551	P488-1	DF-104	PTE4P1		4TM-P1	Picture Tube Cathode
C88	.0022	600	73595	P688-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	Horiz. Sync. Coupling
C89	39	1000	74726	1468-00004	D6-390	5W5Q4	GP1K-390	1FM-44	Horiz. Sync. Coupling
C90	75	1000	75247	1468-000075	D6-750		GP1K-750	1FM-475	Horiz. Feedback
C91	.047	400	73553	P488-047	DF-503	PTE4S5		4TM-S47	Horiz. AFC Plate
C92	.1	400	83551	P488-1	DF-104	PTE4P1		4TM-P1	AFC Filter
C93	.022	400	73562	P488-022	DF-203	PTE4S2		4TM-S22	AFC Filter
C94	.47	200	73787	P288-47		GT2P5		2TM-P47	AFC Filter
C95	220	1000	75248	1469-00025	D6-221	5R5T25	GP2K-221	19C13	Horiz. Osc. Grid
C96	.01	600	73594	P688-01	DF-104	PTE6S1	GP2-333-103	6TM-S1	Fixed Trimmer
C97	560	500	74250	1469-0005	D6-561	5R5T5	GP2K-561	MS-35	Horiz. Sweep Coupling
C98	.001	600	75249	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Horiz. Discharge
C99	.22	200	73560	P488-22		GT2P25		2TM-P22	Horiz. Output Cathode
C100	.047	1000	73597	P1088-047		PTE6S5		6TM-S47	Horiz. Output Screen
C101	10								Fixed Trimmer
C102	33								Damper Cathode Bypass
C103	.018	1000	74727						Damper Filter
C104	.027	1000	73811						Damper Filter
C105	.00025	12500	75250						HV Filter
C106	.047	400	75071	P488-047	DF-503	PTE4S5		4TM-S47	Line Filter
C107	.047	400	75071	P488-047	DF-503	PTE4S5		4TM-S47	Line Filter
C108	100		39369	SI100	D6-101	5W5T1	GP1K-101	19C11	Contrast Control Bypass
C109	.0022	600	73595	P688-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	Audio Coupling ††
C110	.01	400	73561	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling ††
C111	.0047	600	73920	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Tone Comp. ††
C112	.0015	600	73598	P688-0015	D6-152	PTE6D1	GP2L-152	6TM-D15	AF Amp. Plate ††
C113	.01	400	73561	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling ††
C114	.0033	600	73795	P688-0033	D6-332	PTE6D3	GP2-333-332	29C19	Audio Output Plate ††
C115	270			SI270	D6-271	5W5T25	GP2K-271	19C31	Video Coupling †
C116	.1	400	73561	P488-1	D6-104	PTE4P1		4TM-P1	Vert. Feedback †
C117	75			SI75	D6-750		GP1K-750		Fixed Trimmer
C118	.47	600		684-5		GT6P5			Decoupling †

† Not used in all models.
‡ Some models use .0015 600V(Mfgrs. part # 73598)in this application.
* Some models use .001 600V(Mfgrs. part # 73801)in this application.
†† Used in Models 4T101 Only.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA RCA VICTOR PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg			Concentrikit			
B	50KΩ		75215	B11-137 ♯	RTV-110	SBB-510	Vertical Hold Control - Front
C	Shaft End			B11-123 ♯			Horizontal Hold Control - Rear
R2A	50KΩ		75216	E-187 ♯	RTV-191	SBB-511	Attach Per Instructions in "Concentrikit"
B	3500Ω						Brightness Control - Front
R3A	2.5Meg		71440	Q11-239	AM-84-S	AN-83	Contrast Control - Rear
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Height Control
R4	250Ω	4	74945		RTV-60		Attach to R3A Per Instructions
R5A	5000Ω		71441	Q11-114	AG-19-S	AN-10	Width Control - Wire Wound
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Vertical Linearity Control

NOTE : MODEL 4T101 USES A 1 MEG TAPPED @ 200KΩ VOLUME CONTROL WITH ON-OFF SWITCH (PART NO. 75237)

♯ Additional parts to be used with "Concentrikit".

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA RCA VICTOR PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R6	3900Ω			BTS-3900	Antenna Coil Shunt
R7	22Ω				RF Amp. Cathode - See Note 5
R8	22KΩ				RF Amp. Screen
R9	3300Ω 20%			BTS-3300	RF Amp. Plate
R10	3900Ω			BTS-3900	AGC Network
R11	150Ω 20%			BTS-150	AGC Network
R12	100KΩ 20%			BTS-100K	Series Test Point
R13	8200Ω				Mixer Grid Coil Shunt
R14	100KΩ 20%				Mixer Grid
R15	100KΩ 20%				Oscillator Grid
R16	10KΩ 5%				Oscillator Plate
R17	10KΩ 5%				Mixer Plate Coil Shunt
R18	680Ω		503168	BTS-680	1st Video IF Transformer Shunt
R19	120KΩ			BTS-120K	AGC Network - See Note 6
R20	10Meg 20%		504610	BTS-10Meg	Voltage Divider - See Note 7
R21	6800Ω	2	523268	BTB-6800	Decoupling
R22	100Ω		504110	BTS-100	Decoupling

TV PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA RCA VICTOR PART No.	IRC PART No.	IDENTIFICATION CODES
R23	5600Ω	2	523256	BTB-5600	Decoupling
R24	1000Ω	½	504110	BTS-100	Decoupling
R25	1000Ω 20%	½	504210	BTS-1000	AGC Network
R26	82Ω 20%	½	503082	BTS-82	1st Video IF Amp. Cathode
R27	33KΩ	½	503333	BTS-33K	1st Video IF Amp. Screen
R28	1000Ω 20%	½	504210	BTS-1000	1st Video IF Amp. Decoupling
R29	1000Ω 20%	½	504210	BTS-1000	AGC Network
R30	8200Ω 5%	½	14250		2nd Video IF Amp. Grid
R31	82Ω 20%	½	503082	BTS-82	2nd Video IF Amp. Cathode
R32	47KΩ	½	503347		2nd Video IF Amp. Screen
R33	12KΩ 5%	1	30886		2nd Video IF Amp. Plate
R34	4700Ω	1	513247	BTA-4700	2nd Video IF Amp. Decoupling
R35	82Ω 20%	½	503082	BTS-82	3rd Video IF Amp. Cathode
R36	33KΩ	½	503333		3rd Video IF Amp. Screen
R37	1800Ω	½	503218	BTS-1800	3rd Video IF Amp. Plate
R38	1000Ω 20%	½	504310	BTS-1000	3rd Video IF Amp. Plate Decoupling
R39	180Ω	½	503118	BTS-180	4th Video IF Amp. Cathode
R40	1000Ω 20%	½	504210	BTS-1000	4th Video IF Amp. Screen
R41	6800Ω	1	513269	BTA-6800	4th Video IF Amp. Plate Decoupling
R42	33KΩ	½	503333	BTS-33K	AGC Network
R43	18KΩ	½	503318	BTS-18K	AGC Network
R44	18KΩ	½	503318	BTS-18K	AGC Network
R45	47KΩ	½	503347	BTS-47K	AGC Network
R46	150KΩ 20%	½	503415	BTS-150K	AGC Network
R47	5600Ω	½	503256	BTS-5600	Video Det. Diode Load
R48	100KΩ 10%	1	514410	BTA-100K	Voltage Divider
R49	82KΩ 5%	1	513382	BTA-82K-5%	Voltage Divider - See Note 8
R50	4700Ω	½	503247	BTS-4700	Voltage Divider - See Note 9
R51	220Ω	½	503122	BW-½-220	Video Amp. Cathode
R52	4700Ω	½	503247	BTS-4700	Video Amp. Plate
R53	18KΩ	1	513318	BTA-18K	Video Amp. Plate Decoupling
R54	18KΩ	2	523318	BTB-18K	Decoupling
R55	18KΩ	2	523318	BTB-18K	Decoupling
R56	68KΩ	1	513368	BTA-68K	AGC Network - See Note 1
R57	3700Ω	½	503237	BTS-3700	AGC Network - See Note 1
R58	560KΩ	½	503456	BTS-560K	Video Amp. Grid
R59	220Ω	½	503122	BTS-220	Video Amp. Cathode
R60	2700Ω	½	503227	BTS-2700	Video Amp. Plate - See Note 1
R61	4700Ω	1	513247	BTA-4700	Video Amp. Plate - See Note 10
R62	4700Ω	½	503247	BTS-4700	Isolation
R63	4700Ω	½	503247	BTS-4700	Isolation
R64	56KΩ	½	503356	BTS-56K	AGC Amp. Grid
R65	220KΩ	½	503422	BTS-220K	AGC Amp. Cathode
R66	100KΩ	½	503410	BTS-100K	AGC Amp. Plate - See Note 1
R67	100KΩ	½	503410	BTS-100K	AGC Amp. Plate
R68	100KΩ	½	503410	BTS-100K	Voltage Divider - See Note 11
R69	390KΩ	½	503439	BTS-390K	Voltage Divider
R70	220KΩ	½	503422	BTS-220K	Voltage Divider
R71	220KΩ	½	503422	BTS-220K	Voltage Divider
R72	820KΩ 5%	½	503482	BTS-820K-5%	Picture Tube Grid
R73	100KΩ	½	503410	BTS-100K	Picture Tube Cathode
R74	82KΩ	½	503382	BTS-82K	Voltage Divider
R75	22KΩ	½	503322	BTS-22K	Voltage Divider
R76	270KΩ	½	503427	BTS-270K	Voltage Divider
R77	1Meg	½	503510	BTS-1Meg	Voltage Divider
R78	470KΩ 20%	½	504447	BTS-470K	Sound IF Amp. Grid
R79	82Ω 20%	½	504082	BTS-82	Sound IF Amp. Cathode
R80	27KΩ	½	503327	BTS-27K	Sound IF Amp. Screen
R81	1000Ω 20%	½	504210	BTS-1000	Sound IF Amp. Decoupling
R82	22KΩ	½	503322	BTS-22K	Limiter Grid - See Note 1
R83	56KΩ	½	503356	BTS-56K	Limiter Screen
R84	8200Ω	½	503282	BTS-8200	Limiter Decoupling
R85	56KΩ	½	503356	BTS-56K	Voltage Divider
R86	100KΩ 5%	½	3252	BTS-100K-5%	Disc. Diode Load
R87	100KΩ 5%	½	3252	BTS-100K-5%	Disc. Diode Load
R88	5.1Ω	½	72067	BW-½-5.1	Disc. Diode Filament
R89	22KΩ 20%	½	504322	BTS-22K	De-emphasis
R90	47KΩ	½	503347	BTS-47K	Tone Compensation - See Note 2
R91	10Meg	½	503610	BTS-10Meg	AF Amp. Grid - See Note 2
R92	330KΩ	½	503433	BTS-330K	AF Amp. Plate - See Note 2
R93	470KΩ	½	503447	BTS-470K	Output Grid - See Note 2
R94	330Ω	1	513133	BTA-330	Output Cathode - See Note 2
R95	330Ω	1	513133	BTA-330	Output Cathode - See Note 2
R96	2200Ω	½	503222	BTS-2200	Sync. Amp. Cathode
R97	33KΩ	½	523333	BTB-33K	Sync. Amp. Plate
R98	10KΩ	½	503310	BTS-10K	Voltage Divider
R99	8200Ω	½	503282	BTS-8200	Voltage Divider
R100	22KΩ	½	503322	BTS-22K	Integrator
R101	8200Ω	½	503282	BTS-8200	Integrator
R102	8200Ω	½	503282	BTS-8200	Integrator
R103	68KΩ 20%	½	504368	BTS-68K	Isolation
R104	2.2Meg	½	503522	BTS-2.2Meg	Vertical Hold Control Shunt
R105	560KΩ	½	503456	BTS-560K	Vertical MV Grid
R106	1Meg	½	503510	BTS-1Meg	Vertical MV Plate
R107	2.2Meg 20%	½	504522	BTS-2.2Meg	Voltage Divider
R108	12KΩ	½	503312	BTS-12K	Vertical Peaking - See Note 4
R109	2.2Meg	1	503522	BTS-2.2Meg	Vertical MV And Output Grid
R110	470Ω 20%	½	504147	BTS-470	Vertical MV And Output Cathode
R111	560Ω	½	503156	BTS-560	Vertical MV And Output Decoupling
R112	2.2Meg	½	503522	BTS-2.2Meg	Vertical Feedback
R113	68KΩ 20%	½	504368	BTS-68K	Vertical Feedback
R114	39KΩ	1	513339	BTA-39K	Voltage Divider - See Note 12
R115	39KΩ	½	503339	BTS-39K	Voltage Divider - See Note 3
R116	1Meg	½	503510	BTS-1Meg	Damping - See Note 4
R117	100KΩ	1	513410	BTA-100K	Voltage Divider
R118	330KΩ 5%	½	14983	BTS-330K	Horizontal AFC Grid
R119	82KΩ	½	503482	BTS-820K	Horizontal AFC Grid - See Note 4
R120	82KΩ	1	513382	BTA-82K	Horizontal AFC Cathode
R121	330KΩ 5%	1	38892	BTA-330K-5%	Horizontal AFC Cathode
R122	3900Ω	½	503239	BTS-3900	Horizontal AFC Filter
R123	22KΩ	1	513322	BTA-22K	Horizontal AFC Plate
R124	22KΩ	1	513422	BTA-220K	Horizontal Osc. Grid - See Note 4
R125	82KΩ	1	513382	BTA-82K	Horizontal Osc. Plate
R126	12KΩ 5%	1	30866	BTA-12K-5%	Horizontal Osc. Coil Shunt
R127	56KΩ	½	503356	BTS-56K	Voltage Divider
R128	680KΩ	½	503468	BTS-680K	Voltage Divider
R129	150KΩ	½	503415	BTS-150K	Horizontal Feedback - See Note 3
R130	47Ω 20%	½	504047		Parasitic Suppressor

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA RCA VICTOR PART No.	IRC PART No.	IDENTIFICATION CODES
R131	470KΩ	½	503447	BTS-470K	Horizontal Output Grid
R132	220Ω	2	523122	BW-2-220	Horizontal Output Cathode
R133	6800Ω	2	523268	BTB-6800	Horizontal Output Screen
R134	2200Ω 20%	1	513222	BTA-2200	Horizontal Linearity Coil Shunt
R135	2.2Ω	½	72066		HV Rectifier Filament
R136	1Meg	1	514510		HV Filter - See Note 3
R137	100KΩ	1	514410	BTA-100K	Isolation

Note 1. Not used in all models.
Note 2. Used only in Model 4T101 .
Note 3. Some models use parallel resistors in this application to obtain desired value.
Note 4. Some models use series resistors in this application to obtain desired value.
Note 5. Some models use 27Ω resistor in this application.
Note 6. Some models use 33KΩ resistor in this application.
Note 7. Some models use 4.7 meg resistor in this application.
Note 8. Some models use 100KΩ resistor in this application.
Note 9. Some models use 3300Ω resistor in this application.
Note 10. Some models use 6800Ω resistor in this application.
Note 11. Some models use 47KΩ resistor in this application.
Note 12. Some models use 27KΩ resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA RCA VICTOR PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ② 1.4A	115VAC .250ADC	6.3VAC ② 1.2A	6.3VAC ③ 7A	75207	P-8158 ①		

① Drill new mounting holes.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	SEC.	REPLACEMENT DATA RCA VICTOR PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	245Ω Tap 21.5Ω	0Ω	76154		HVO-8		Horiz. Output Trans.
T3 T4A B	475Ω 43.5Ω 3.4Ω	.5Ω	76139 76136		MDF-30		Vertical Output Trans. Horizontal Deflection Coil Vertical Deflection Coil

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	SEC.	DC RES. PRI.	SEC.	REPLACEMENT DATA RCA VICTOR PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T5	10.5KΩ CT	3.3Ω	740 CT	.7Ω	73636 76156 ②	A-3823	A-2936	RO-110 ①	① Drill one new mounting hole. ② Used in Model 4T101

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ↺)	REPLACEMENT DATA RCA VICTOR PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.250A	53Ω	1 Henry	76140	C-2326 ①	C-2996 ①	TR-3300 ①	① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	SEC.	REPLACEMENT DATA RCA VICTOR PART No.	MEISSNER PART No.	IRC PART No.	NOTES
L2	Ant. Coil	.6Ω	0Ω	73591			
L3	Ant. Coil	.6Ω	0Ω	73591			
L4	IF Trap	.6Ω		75242			
L5	IF Trap	.6Ω		75242			
L6	Ant. Coil Shunt	.5Ω		75241			
L7	FM Trap	0Ω		75449			
L8	Ant. Coils	0Ω		75180			Stator Complete With Rotor, Coils
L9	Fil. Choke	0Ω		73477			
L10	RF Coils	0Ω		75179			Stator Complete with Rotor, Coils
L11	RF Coils	0Ω		75183			
L12	Mixer Grid Coils	0Ω		75178			Stator Complete With Rotor, Coils
L13	Mixer Grid Coil	0Ω		75182			
L14	Osc. Coils	0Ω		75175			Stator Complete with Rotor, Coils
L15	Mixer Plate Loading	0Ω		75185			
L16	RF Choke	.3Ω		75202		CLA	.56 Microhenry
L17	Fil. Choke	0Ω		73477			
L18	Conv. Trans.	.4Ω	.3Ω	75181			
L19	1st Video IF	.2Ω	.6Ω	74569			With Trap
L20	Fil. Choke	0Ω		73477			
L21	2nd Video IF	.2Ω		74590			With Trap
L22	3rd Video IF	.2Ω	0Ω	76264			Sound Take Off
L23	Fil. Choke	0Ω		73477			
L24	4th Video IF	.2Ω	.1Ω	73574			
L25	Sound Trap	.1Ω	0Ω	71778			
L26	RF Choke	3Ω		76011			36 Microhenries Wound on 22KΩ Resistor (Orange And Blue Dots)
L27	5th Video IF	.4Ω	Tap .2Ω	75210			
L28	Peaking	5Ω		75290			56 Microhenries (Orange And White Dots)
L29	Peaking	12Ω		75252			500 Microhenries (Green And White Dots)
L30	4.5MC Trap	2.5Ω		75251			(Green And Yellow Dots) Includes 47MMFD Condenser
L31	Peaking	12Ω		75252			500 Microhenries (Green And White Dots)
L32	Peaking	2.5Ω		71793			36 Microhenries (Black Dot)
L33	Peaking			76132			500 Microhenries (Blue And Green Dots) Wound on 10KΩ Resistor- Not Used In All Models
L34	Peaking	5Ω		75253			120 Microhenries (Blue And Red Dots)
L35	1st Sound IF	.2Ω		75211			
L36	Disc. Trans.	.3Ω	.2Ω	75212			
L37	Horiz. Osc.	80Ω	60Ω	75213			
L38	Horiz. Lin.	38Ω		71449			

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA RCA VICTOR PART No.	VIKING PART No.	QUAM PART No.	NOTES
	FIELD RES.	V. C. IMP.				
SP1	PM	3.3Ω	74974 76155 ②	12J12	12A4A	② Used in Model 4T101
	CONE DIA.	V. C. DIA.				
SP2	11 1/2"	1"	74901			

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	REPLACEMENT DATA RCA VICTOR PART No.	SYLVANIA PART No.	SELETRON PART No.	NOTES
M 1	.250A	75221	NF-5	6Q2	
M 2	.250A	75221	NF-5	6Q2	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA RCA VICTOR PART No. FUSE	HOLDER	LITTELFUSE PART No. FUSE	HOLDER	REMARKS
M3	3AG PigTail	.350	73600		318.250		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA RCA VICTOR PART No.	NOTES
M4	Bayonet	7.5	.2	White	11765	Type # 51

MISCELLANEOUS

ITEM No.	PART NAME	RCA VICTOR PART No.	NOTES
M5	RF Tuner		
M6	Switch	75590	Channel Light
M7	Switch	76010,	AGC
M8	Focus Magnet	76137	
M9	Ion Trap	76141	
B2, B4	Trimmer	75217	Dual (Horizontal Drive And Horizontal Lock 10-160MMFD)
	Knob	74959	Fine Tuning (Maroon)
	Knob	73995	Fine Tuning (Tan)
	Knob	73996	Channel Selector (Maroon)
	Knob	73997	Channel Selector (Tan)
	Knob	74962	Brightness, Vertical Hold (Maroon)
	Knob	73999	Brightness, Vertical Hold (Tan)
	Knob	74969	Channel Light Marker (Maroon)
	Knob	74003	Channel Light Marker (Tan)
	Knob	74963	Contrast - Horizontal Hold (Maroon)
	Knob	74001	Contrast - Horizontal Hold (Tan)

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA RCA VICTOR PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V22	Converter	6BE6	6BE6	7CH	
V23	IF Amplifier	6BA6	6BA6	7BK	
V24	Detector - AVC-AF Amplifier	6AV6	6AV6	7BT	
V25	Phase Inverter	6C4	6C4	6BG	
V26	Power Output	6V6GT	6V6GT	7AC	
V27	Power Output	6V6GT	6V6GT	7AC	
V28	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	VOLT	REPLACEMENT DATA RCA VICTOR PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C119A	30	350	73372	AF64H4A		UP335-		TVL-3620	● Filter
B	30	300				330C			▲ Filter
C	20	25							Output Cathode
C120	150	500	39632	1468-00015	D6-151	5W5T15	GP2K-151	1FM-315	RF Coupling
C121	56		71924		TCZ-56		NPO-333-560		Osc. Grid Cap
C122	.01	400	73561	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Conv. Screen
C123	.05	200	73553	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C124	.005	400	73920	P888-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	IF Amp. Screen
C125	150	500	39632	1468-00015	D6-151	5W5T15	GP2K-151	1FM-315	RF Bypass
C126	.0018	600	73851	P688-002	D6-202	PTE6D2	GP2-333-203	6TM-D15	Tone Comp.
C127	.001	400	73801	P688-001	D6-102	PTE6D1	GP2L-152	6TM-D1	Tone Comp.
C128	.0015	600	71394	P688-0015	D6-152	PTE6D1	GP2L-152	6TM-D15	Audio Coupling
C129	.018	200	58476	P288-015	DF-203	PTE6S15		6TM-S15	Tone Comp.
C130	.015	200	73797	P288-015	DF-203	PTE6S15	GP2-333-103	6TM-S15	Tone Comp.
C131	.01	400	73561	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C132	150	500	39632	1468-00015	D6-151	5W5T15	GP2K-151	1FM-315	AF Amp. Plate
C133	.003	400	70603	P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	Tone Comp.
C134	.01	400	73561	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C135	.02	400	73562	P488-02	DF-203	PTE4S2		4TM-S2	Audio Coupling
C136	.002	1000	73803	P1088-002		PTE6D2		MB-D2	Output Plate
C137	.002	1000	73803	P1088-002		PTE6D2		MB-D2	Output Plate

RADIO PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	RCA VICTOR PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R138A	1.5Meg	½	75537	Q18-131XX	AT-95	SBT-222-S	Volume Control - Tapped ⓐ 250KΩ And 500KΩ
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R138A Per Instructions
C	Switch		Not req.	76-1	SWB	Not req.	Attach to R138A Per Instructions
R139A	2 Meg	½	75538	Q11-139	AG-83-S	B-75	Tone Control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R139A Per Instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	RCA VICTOR PART No.	IRC PART No.	
R140	2.2Meg	½	503522	BTS-2.2Meg	Converter Grid
R141	470Ω	½	504147	BTS-470	Oscillator Coil Shunt
R142	22KΩ	½	503322	BTS-22K	Oscillator Grid
R143	18KΩ	1	513318	BTA-18K	Oscillator Anode
R144	47Ω	½	504047		Parasitic Suppressor
R145	2.2Meg	½	503522	BTS-2.2Meg	AVC Network
R146	270Ω	½	503127	BTS-270	IF Amp. Cathode
R147	39KΩ	½	503339	BTS-39K	IF Amp. Screen
R148	22KΩ	½	503322	BTS-22K	Diode Filter
R149	470KΩ	½	503447	BTS-470K	Diode Load
R150	27KΩ	½	503327	BTS-27K	Tone Compensation
R151	1.5Meg	½	503515	BTS-1.5Meg	Tone Compensation
R152	1.5Meg	½	503515	BTS-1.5Meg	Tone Compensation
R153	150KΩ	½	503415	BTS-150K	Tone Compensation
R154	18KΩ	½	503318	BTS-18K	Tone Compensation
R155	27KΩ	½	503327	BTS-27K	Tone Compensation
R156	10Meg	½	504610	BTS-10Meg	AF Amp. Grid - See Note 13
R157	270KΩ	½	503427	BTS-270K	AF Amp. Plate
R158	68KΩ	½	503368	BTS-68K	Phase Inv. Grid
R159	3300Ω	½	30733	BTS-3300-5%	Phase Inv. Cathode
R160	82KΩ	½	503382	BTS-82K	Phase Inv. Plate
R161	470KΩ	½	503447	BTS-470K	Output Grid
R162	470KΩ	½	503447	BTS-470K	Output Grid
R163	330Ω	1	513133	BTA-330	Output Cathode
R164	2200Ω	5	73637	1 3/4A-2250	Filter - Wire Wound
R165	3Ω	½	72323	BW-½-3	Pilot Light Dropping - Wire Wound

Note 13. Some models use series resistors in this application to obtain desired value.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	RCA VICTOR PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T6	117VAC (ⓐ .375A	430VCT .052ADC	6.3VAC ⓐ 2.6A		70127	PM-8418 ①	P-3047	

① Drill new mounting holes.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	RCA VICTOR PART No.	MEISSNER PART No.	
L39	Loop Ant.	1.3Ω		75706		
L40	Osc. Coil	.7Ω	5.9Ω	75485		
L41	1st AM IF	13Ω	15Ω	75486		
L42	2nd AM IF	13Ω	15Ω	75487		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					RCA VICTOR PART No.		
M10	Bayonet	7.5	.2	White	11765		Type #51
M11	Bayonet	7.5	.2	White	11765		Type # 51
M12	Bayonet	7.5	.2	White	11765		Type #51

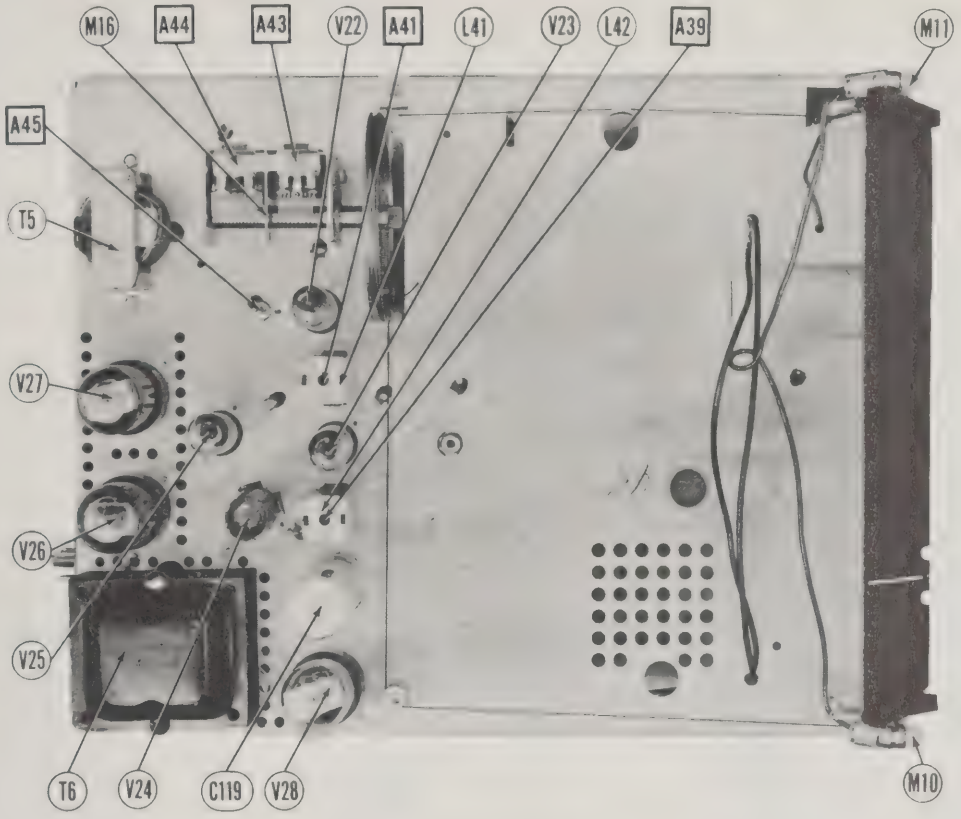
PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA							REMARKS
	RCA VICTOR PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M13	75475	ACD-2J	A-1 A-3			96-0-T	0-1 or S-1 And 0-3 Or S-3	Used in 33 1/3 - 78 RPM Changer
M14	75575	CAC-J Or AC-J	Q-33 A-3	W31AR	A53MG	34	0-1 Or S-1	Used in 45 RPM Changer

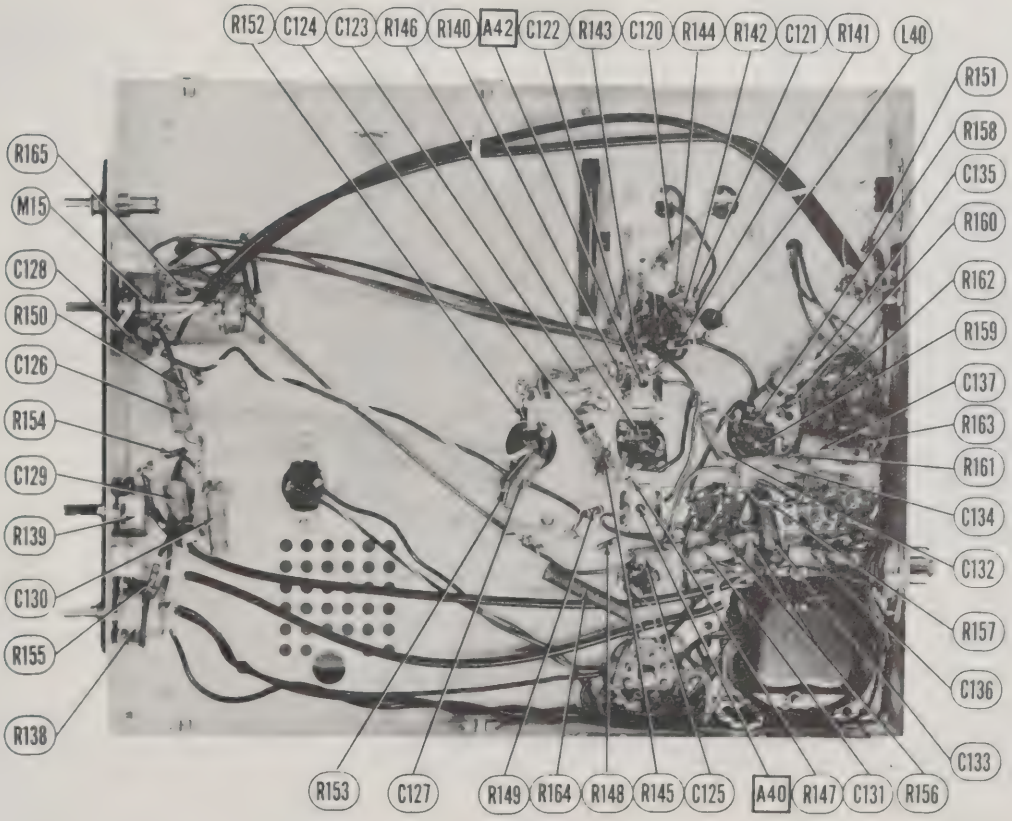
ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

MISCELLANEOUS

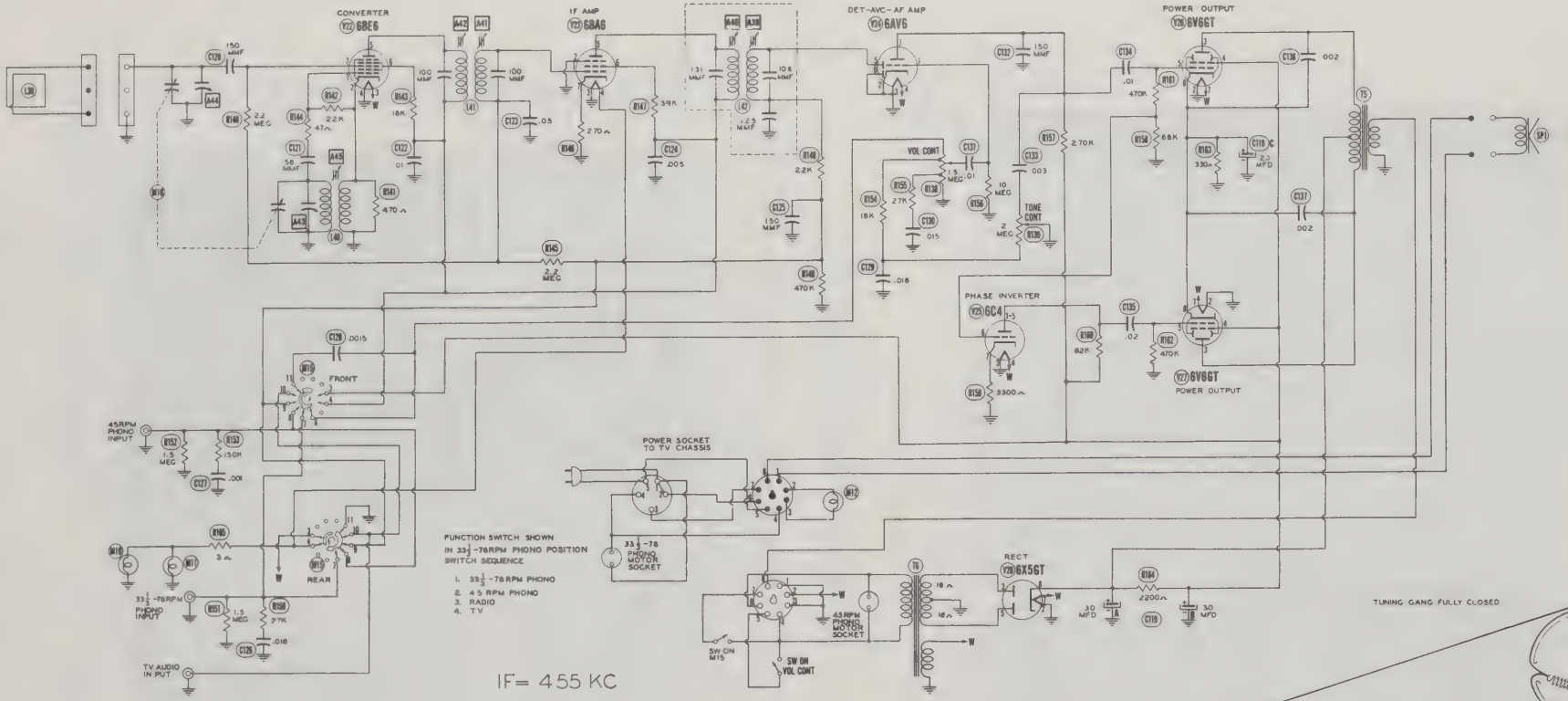
ITEM No.	PART NAME	RCA VICTOR PART No.	NOTES
M15	Switch	75539	Function Selector
M16	Tuning Capacitor	75534	2 Gang (36-508MMF, 17-147MMF)



RADIO CHASSIS-TOP VIEW



RADIO CHASSIS-BOTTOM VIEW



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V22	6BE6	6.7VDC	0V	6.3VAC	0V	105VDC	70VDC	.7VDC	
V23	6BA6	0V	0V	0V	6.3VAC	105VDC	110VDC	1.8VDC	
V24	6AV6	-.3VDC	0V	0V	6.3VAC	-1.1VDC	0V	75VDC	
V25	6C4	85VDC	0V	0V	6.3VAC	85VDC	0V	4.4VDC	
V26	6V6GT	0V	0V	288VDC	105VDC	0V	0V	6.3VAC	13VDC
V27	6V6GT	0V	0V	286VDC	105VDC	0V	0V	6.3VAC	13VDC
V28	6X5GT	0V	0V	320VAC	0V	320VAC	417VAC	6.3VAC	290VDC

* TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V22	6BE6	22KΩ	.7Ω	1Ω	0Ω	12.2KΩ	120KΩ	4.8Meg	
V23	6BA6	2.7Meg	0Ω	0Ω	1Ω	12.2KΩ	141KΩ	270Ω	
V24	6AV6	10Meg	0Ω	0Ω	1Ω	490KΩ	0Ω	1270KΩ	
V25	6C4	1.25MΩ	Inf.	0Ω	.1Ω	125KΩ	68KΩ	3.3KΩ	
V26	6V6GT	0Ω	0Ω	1270Ω	12.2KΩ	540KΩ	Inf.	.1Ω	330Ω
V27	6V6GT	0Ω	0Ω	1270Ω	12.2KΩ	475KΩ	.9Ω	.1Ω	330Ω
V28	6X5GT	0Ω	0Ω	180	Inf.	180	Inf.	.1Ω	45KΩ

† MEASURED FROM PIN 6 OF V28

ALL MEASUREMENTS TAKEN IN AM SWITCH POSITION

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

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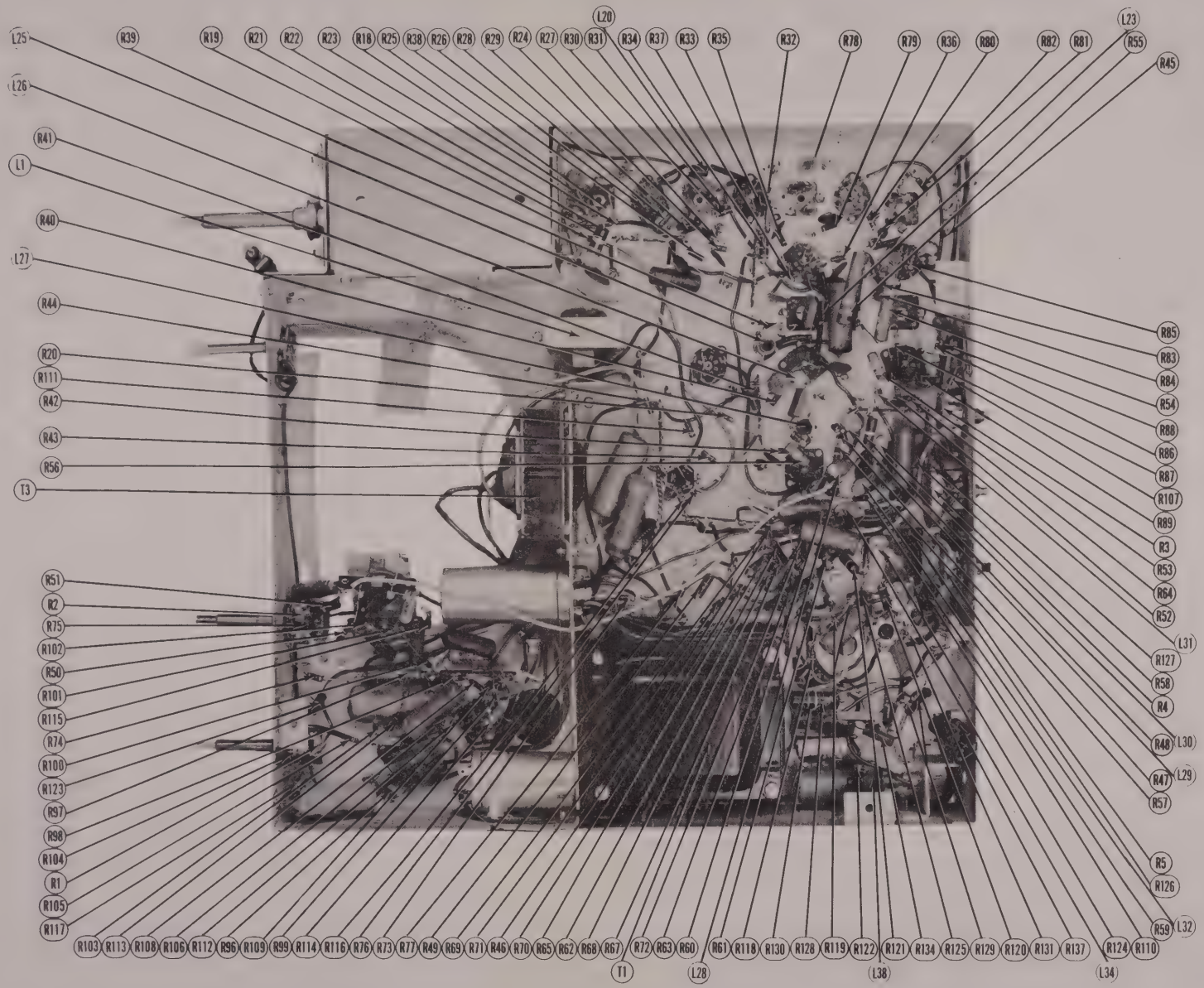
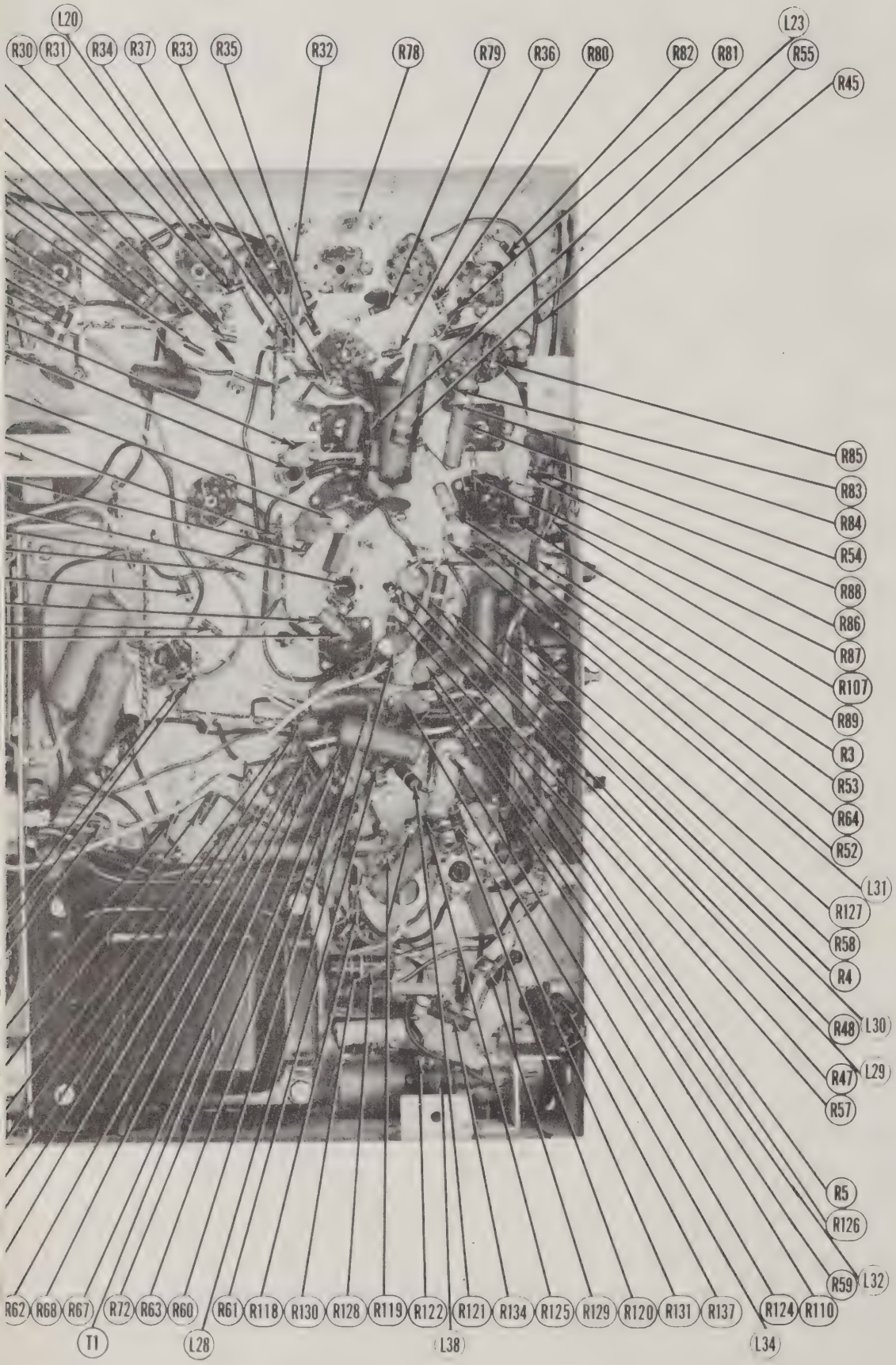
RCA VICTOR MODEL 4T101 (Ch. KCS61), 4T141 (Ch. KCS62 and RADIO Ch. RC1090)

RADIO SCHEMATIC



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



TOR AND INDUCTOR IDENTIFICATION

SILVERTONE MODELS 116, 116A, 131, 131A, 162-16, 173-16, 177-19, 189-16

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MODEL 116A

SILVERTONE MODELS 116, 116A, 131, 131A, 162-16, 173-16, 177-19, 189-16

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SILVERTONE MODELS 116, 116A, 131, 131A, 162-16, 173-16, 177-19, 189-16

SILVERTONE MODELS 116, 116A, 131, 131A, 162-16, 173-16, 177-19, 189-16

SILVERTONE MODEL 116A

TRADE NAME	Silvertone, Models 116, 116A, 131, 131A, 162-16, 173-16, 177-19, 189-16 (Ch. 110.700-1, -10, -40)
SUPPLIER	Sears, Roebuck & Co., 925 S. Homan St., Chicago, Ill.
TYPE SET	Television Receiver
TUBES	Nineteen
POWER SUPPLY	110-120 Volts AC-60 Cycle
RATING	1.95 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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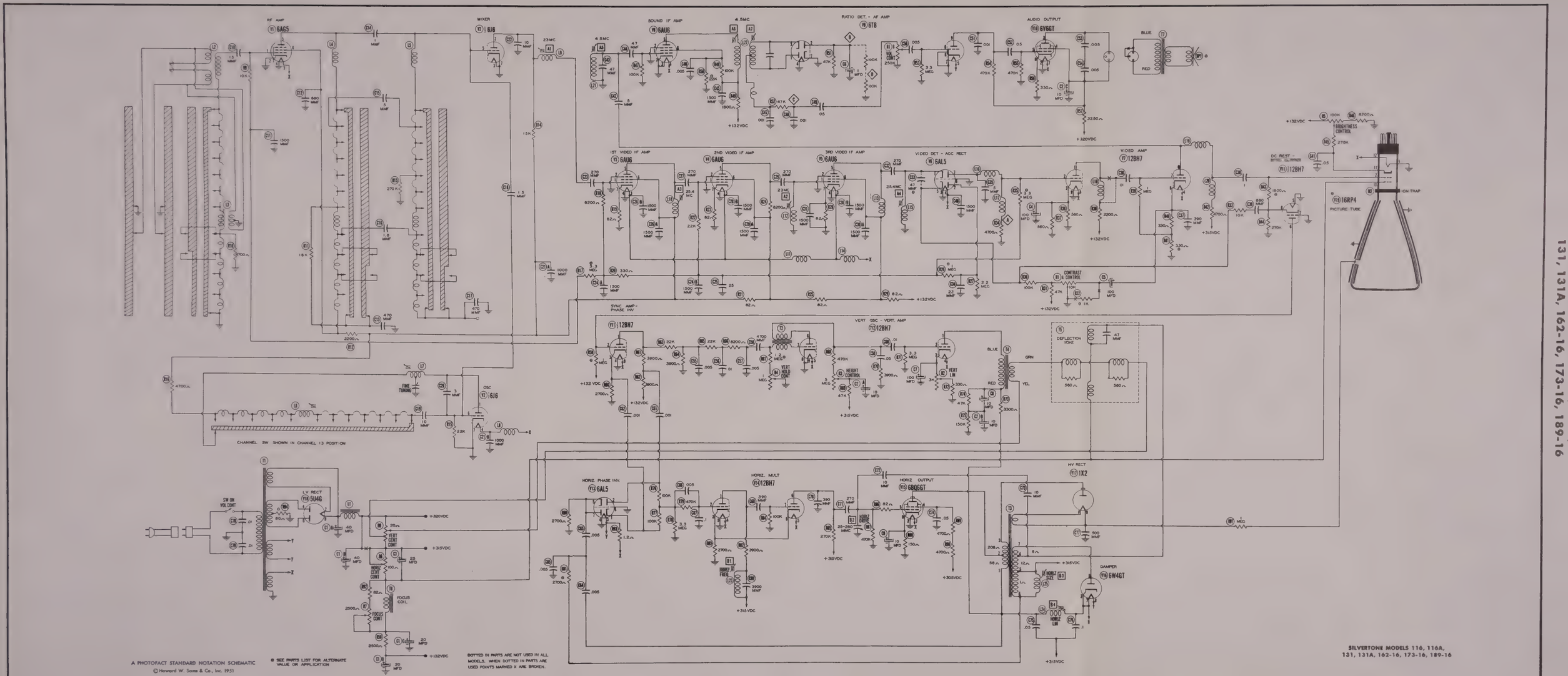
RF AMP
MIXER
SOUND IF AMP
RATIO DET. - AF AMP
AUDIO OUTPUT
1ST VIDEO IF AMP
2ND VIDEO IF AMP
3RD VIDEO IF AMP
VIDEO DET - AGC RECT
VIDEO AMP
SYNC AMP - PHASE INV
VERT OSC - VERT. AMP
HORIZ. PHASE INV.
HORIZ. MULT.
HORIZ. OUTPUT
HV RECT
DAMPER
LV RECT
OSC
PICTURE TUBE
ION TRAP
DEFLECTION YOKE
CHANNEL SW SHOWN IN CHANNEL 13 POSITION
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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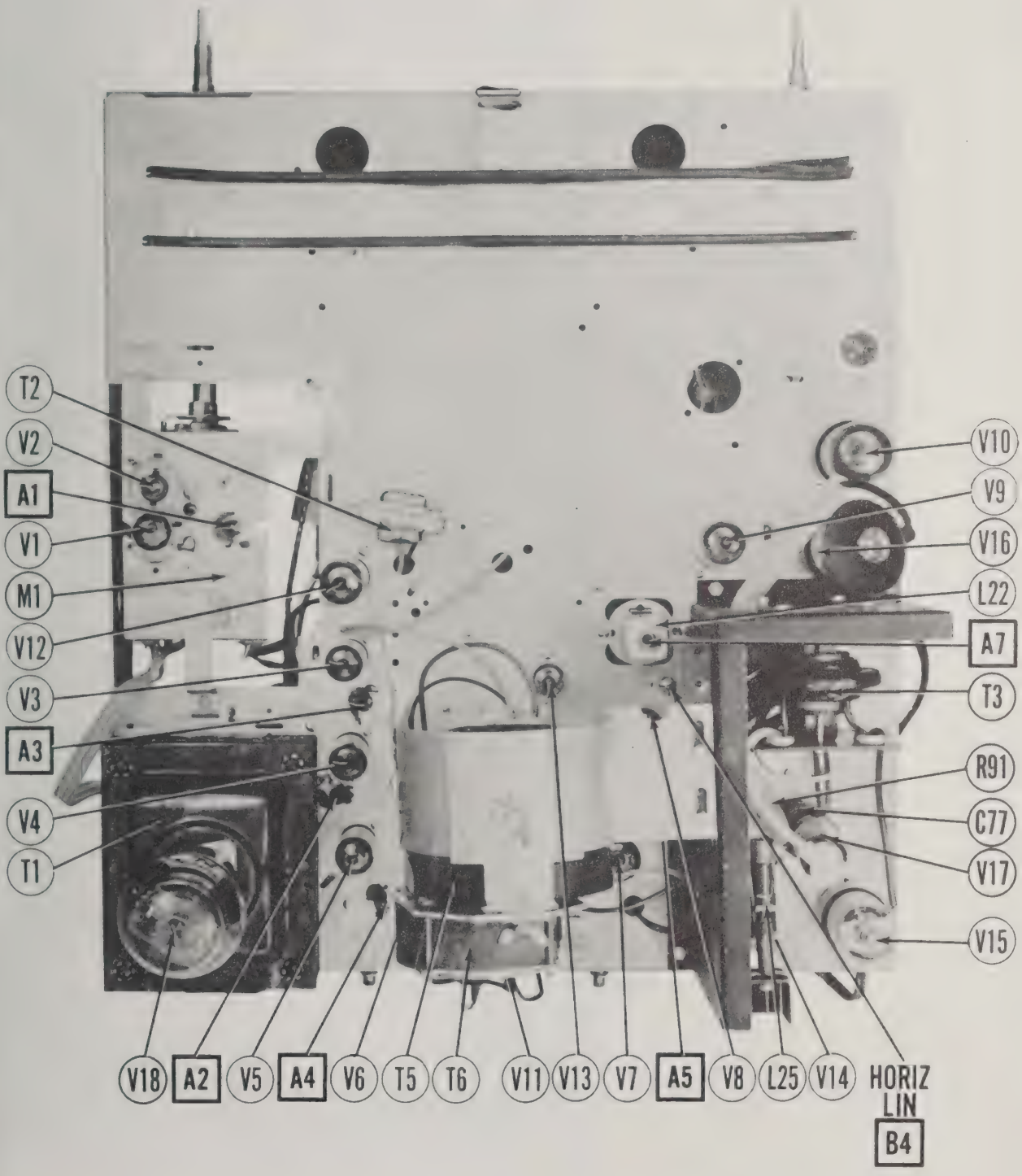
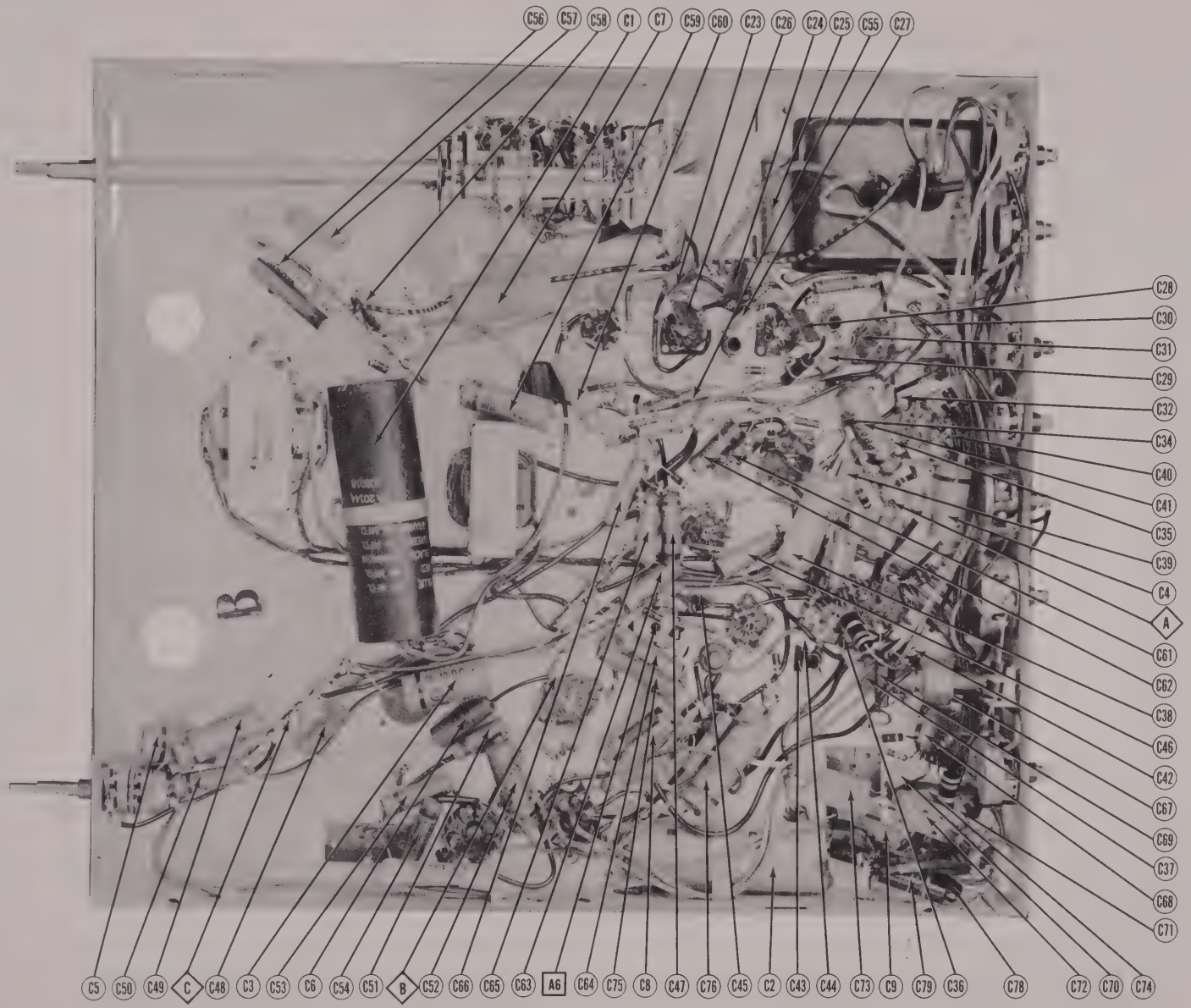
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.
SILVERTONE MODELS 116, 116A, 131, 131A, 162-16, 173-16, 189-16

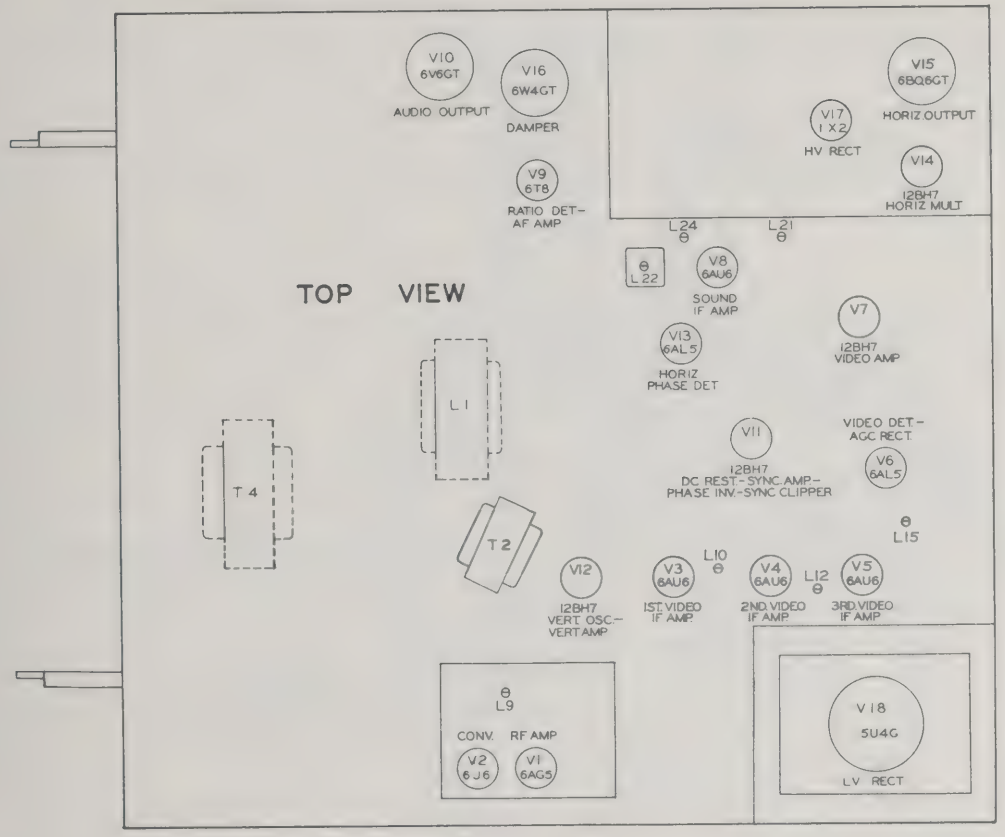
SILVERTONE MODELS 116, 116A, 131, 131A, 162-16, 173-16, 189-16

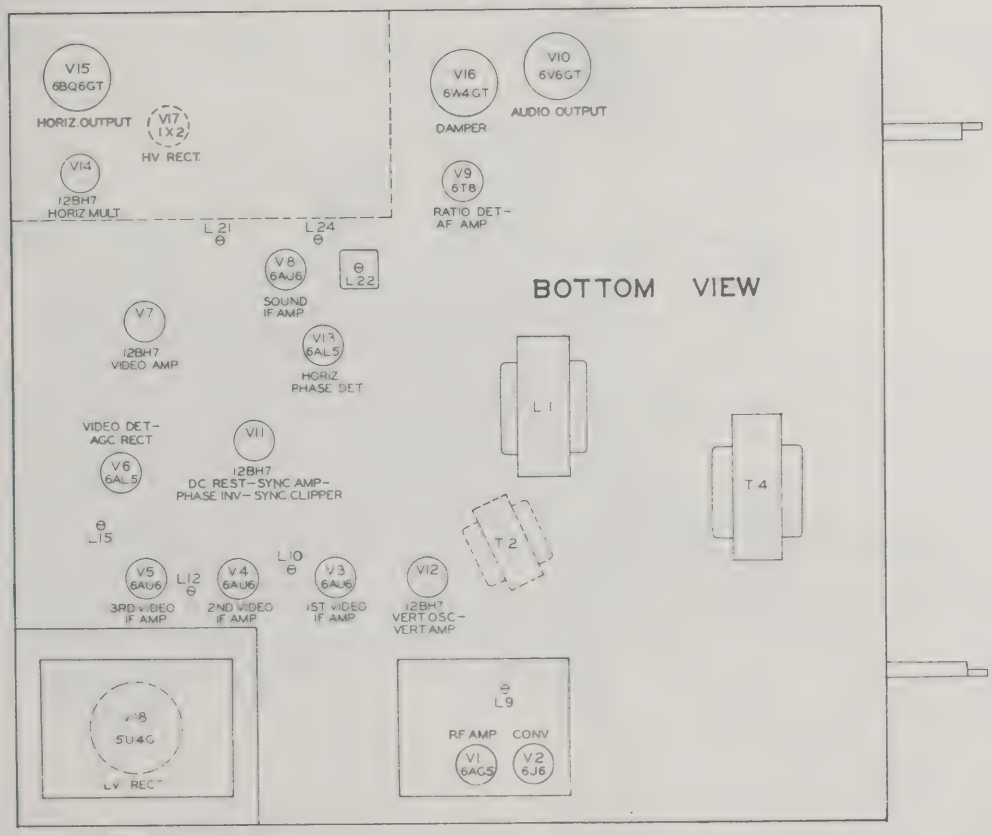


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator (V14) from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) and replace it with a 6J6 which has pin 1 removed. This will disable the local oscillator and prevent the possibility of erroneous indications.

Connect the negative lead of a 3 volt battery to the junction of R20 and C25, connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	23MC (Unmod.)	Any	DC Probe to Point (A). Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	Direct	"	25.4MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	23MC (10MC SWP)	21.9MC 26.4MC	Any	Vert. Amp. to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (± 1%) resistors in series from Point B to chassis. The junction of these two resistors is alignment Point D as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to pin 7 (Grid) of 12BH7 (V7). Low side to chassis.	4.5MC (Unmod.)	Any	DC Probe to Point (B). Common to chassis.	A5, A6	Adjust for maximum deflection.
5.	.01MFD	"	"	"	DC Probe to Point (C). Common to Point (D).	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD	High side to pin 7 (Grid) of 12BH7 (V7). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. Amp. to Point (B). Low side to chassis.	A5, A6	Disconnect stabilizer capacitor C6. Adjust for maximum amplitude and symmetry as per figure 2.
5.	.01MFD	"	"	"	"	Vert. Amp. to Point (C). Low side to chassis.	A7	Reconnect capacitor C6. Adjust A7 so 4.5MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A6 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter and replace the original 6J6 in its socket.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 120Ω carbon res.	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 213.75MC	13	Vert. Amp. to Point (A). Low side to chassis.	A8	Adjust to place sound marker as shown in figure 4. The video marker should be at 50%.
7.	"	"	207MC (10MC SWP)	205.25MC 209.75MC	12	"		Check all high band channels to see that the sound marker can be properly placed well within the range of the fine tuning control. If not, compromise adjustment of A8 may be required.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
8.	"	"	85MC (10MC SWP)	83.25MC 87.75MC	6	"	A9	Adjust to place sound marker as shown in figure 4. The video marker should be at 50%.
9.	"	"	79MC (10MC SWP)	77.25MC 81.75MC	5	"		Check all low band channels to see that the sound marker can be properly placed well within the range of the fine tuning control. If not, compromise adjustment of A9 may be required.
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

THE RF AND MIXER PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD BE REQUIRED IN THE FIELD.

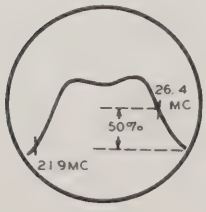


FIG. 1

FIG. 2

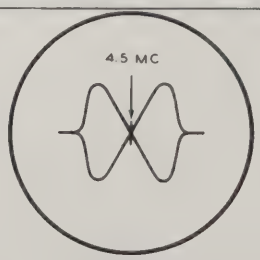


FIG. 3

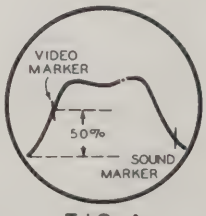
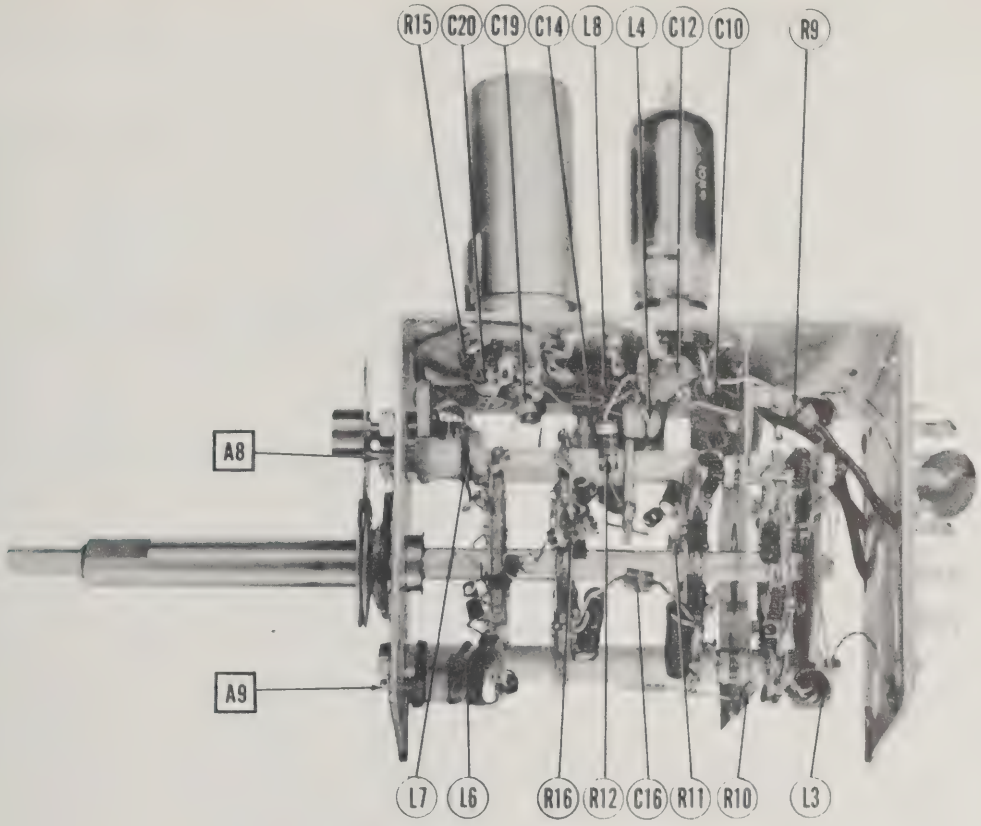
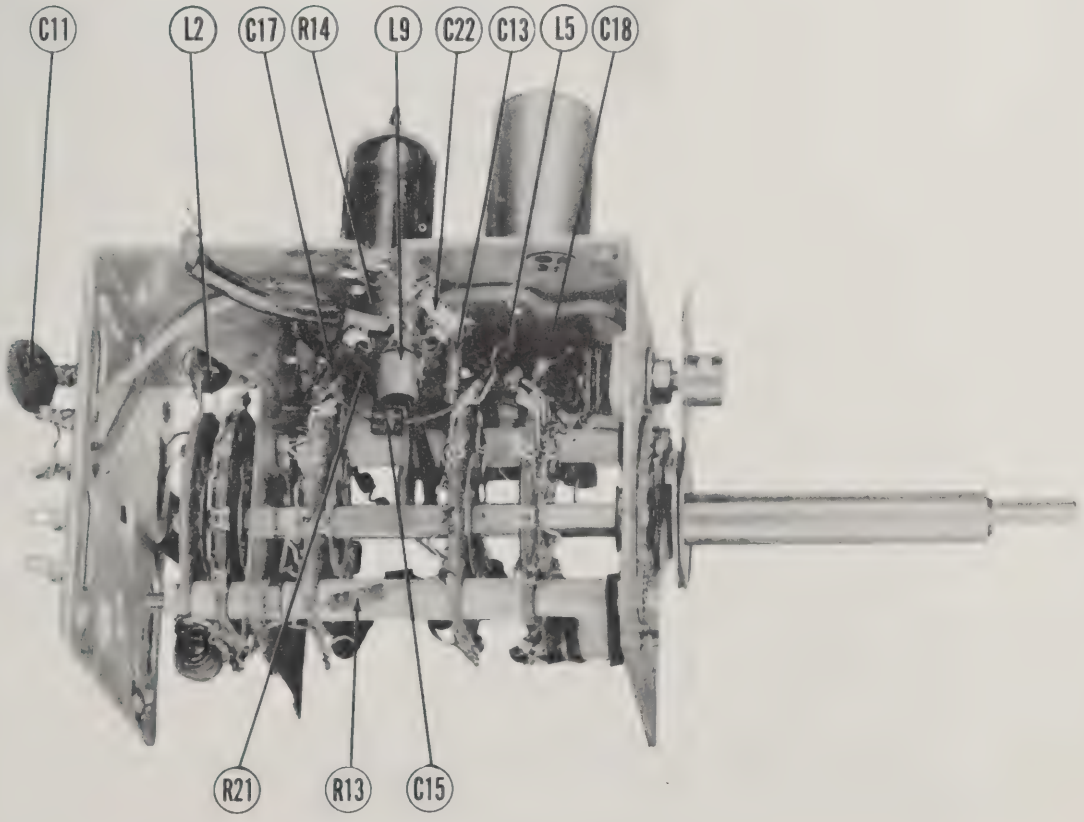


FIG. 4



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-.6VDC	0V	6.3VAC	0V	110VDC	110VDC	0V		
V 2	6J6	90VDC	70VDC	0V	6.3VAC	-1.4VDC	§-5VDC	0V		
V 3	6AU6	-.2VDC	0V	6.3VAC	0V	115VDC	130VDC	.6VDC		
V 4	6AU6	-.2VDC	0V	6.3VAC	0V	65VDC	130VDC	.6VDC		
V 5	6AU6	0V	0V	6.3VAC	0V	120VDC	130VDC	1VDC		
V 6	6AL5	0V	-1.6VDC	0V	6.3VAC	.1VDC	0V	-.3VDC		
V 7	12BH7	115VDC	-.3VDC	2.8VDC	6.3VAC	6.3VAC	230VDC	1VDC	14VDC	0V
V 8	6AU6	-1VDC	0V	0V	6.3VAC	130VDC	40VDC	0V		
V 9	6T8	-.4VDC	-1.2VDC	-.4VDC	0V	6.3VAC	0V	0V	-1.2VDC	55VDC
V 10	6V6GT	0V	0V	205VDC	215VDC	0V	320VDC	6.3VAC	11VDC	
V 11	12BH7	65VDC	25VDC	25VDC	0V	0V	25VDC	0V	3.6VDC	6.3VAC
V 12	12BH7	420VDC	0V	35VDC 8VDC	6.3VAC	6.3VAC	175VDC 25VDC	-35VDC -40VDC	0V	0V
V 13	6AL5	7.4VDC	-7.4VDC	5.6VDC	0V	0V	0V	0V		
V 14	12BH7	300VDC	.3VDC	18VDC	6.3VAC	6.3VAC	90VDC	-3.2VDC	18VDC	0V
V 15	6BQ6GT	0V	0V	0V	170VDC	.3VDC	0V	6.3VAC	17VDC	TOP CAP *
V 16	6W4GT	370VDC	320VDC	480VDC	0V	330VDC	0V	480VDC	480VDC	
V 17	1X2	* DO NOT MEASURE								
V 18	5U4G	0V	325VDC	0V	320VAC	0V	320VAC	0V	325VDC	
V 19	16RP4	0V	3.7VDC	PIN 10 320VDC	PIN 125VDC	11 4VDC	PIN 12 6.3VAC			

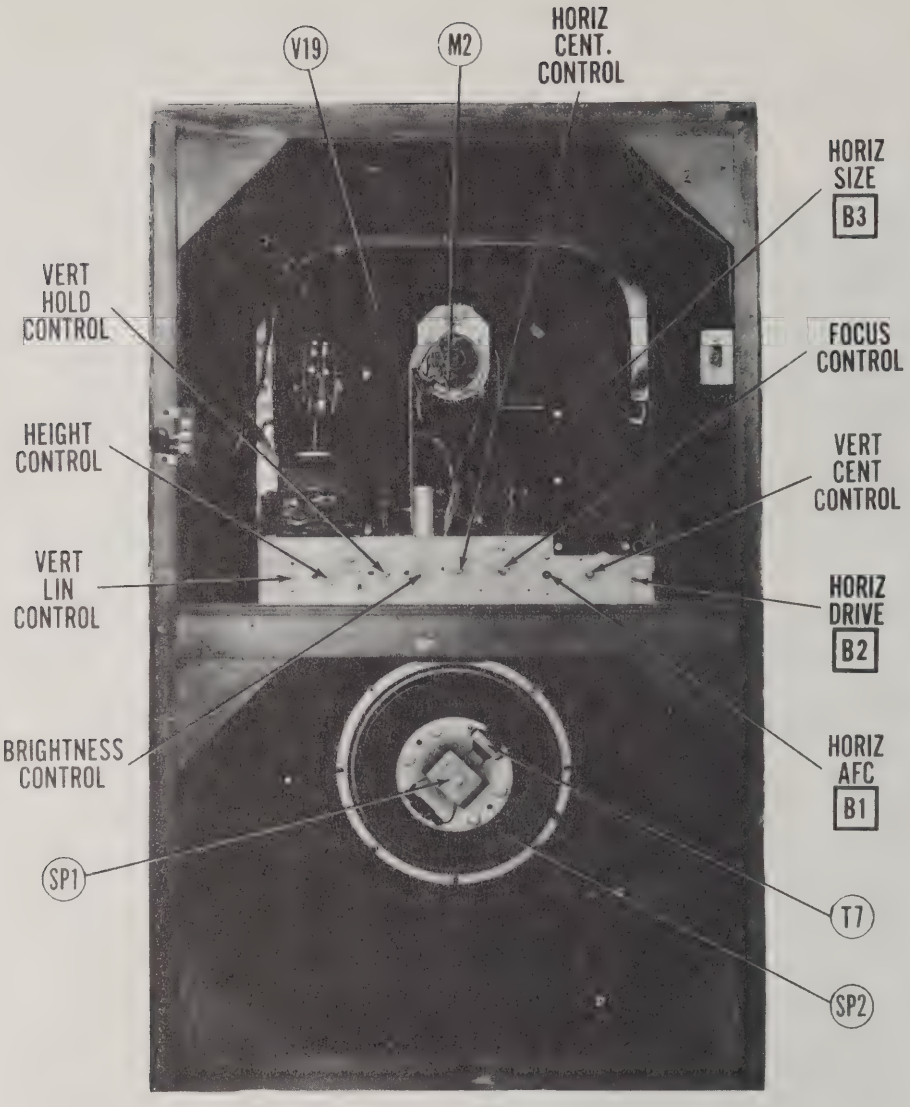
FOCUS CONTROL COUNTERCLOCKWISE
§ TAKEN WITH VACUUM TUBE VOLTMETER
* DO NOT MEASURE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	4 Meg.	0Ω	.1Ω	0Ω	†5.2KΩ	†5.2KΩ	0Ω		
V 2	6J6	†7.7KΩ	†18KΩ	0Ω	.3Ω	270KΩ	22KΩ	0Ω		
V 3	6AU6	1.6 Meg.	0Ω	.1Ω	0Ω	†3KΩ	†3KΩ	82Ω		
V 4	6AU6	1.6 Meg.	0Ω	.5Ω	0Ω	†11KΩ	†3KΩ	82Ω		
V 5	6AU6	.3Ω	0Ω	.3Ω	0Ω	†3KΩ	†3KΩ	82Ω		
V 6	6AL5	.3Ω	1.5 Meg.	0Ω	.1Ω	100KΩ	0Ω	4.7KΩ		
V 7	12BH7	†5KΩ	4.7KΩ	250Ω	.1Ω	.1Ω	†4.7KΩ	1 Meg.	660Ω	0Ω
V 8	6AU6	100KΩ	0Ω	0Ω	.1Ω	†4.8KΩ	†100KΩ	0Ω		
V 9	6T8	Inf.	47KΩ	Inf.	0Ω	.1Ω	0Ω	0Ω	3.3 Meg.	†470KΩ
V 10	6V6GT	Inf.	0Ω	†3.6KΩ	†3.2KΩ	470KΩ	†0Ω	.1Ω	330Ω	
V 11	12BH7	†10KΩ	†1 Meg.	2.7KΩ	0Ω	0Ω	†1 Meg.	0Ω	270KΩ	.1Ω
V 12	12BH7	#4KΩ	3.3 Meg.	330Ω 3.3KΩ	.1Ω	.1Ω	†520KΩ †5 Meg.	1.6 Meg. 2.6Meg.	0Ω	0Ω
V 13	6AL5	3.4 Meg.	3.4 Meg.	.8Ω	0Ω	2.7KΩ	0Ω	2.7KΩ		
V 14	12BH7	†4KΩ	3.8 Meg.	2.7KΩ	.1Ω	.1Ω	†270KΩ	100KΩ	2.7KΩ	0Ω
V 15	6BQ6GT	Inf.	0Ω	Inf.	†10KΩ	470KΩ	Inf.	.1Ω	150Ω	TOP CAP #90Ω
V 16	6W4GT	#50KΩ	†47KΩ	160KΩ	Inf.	†30Ω	Inf.	#0Ω	#.1Ω	
V 17	1X2	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP #295Ω
V 18	5U4G	Inf.	20KΩ	Inf.	85Ω	Inf.	85Ω	Inf.	20KΩ	
V 19	16RP4	0Ω	270KΩ	PIN 10 †25Ω	PIN 300KΩ	11 330KΩ	PIN 12 .1Ω			

FOCUS CONTROL COUNTERCLOCKWISE
† MEASURED FROM 320VDC POINT
# MEASURED FROM PIN 3 OF V16

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



CABINET–REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Adjust the horizontal oscillator slug (B2) until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer (B2) clockwise as far as possible without crowding the right half of the picture.

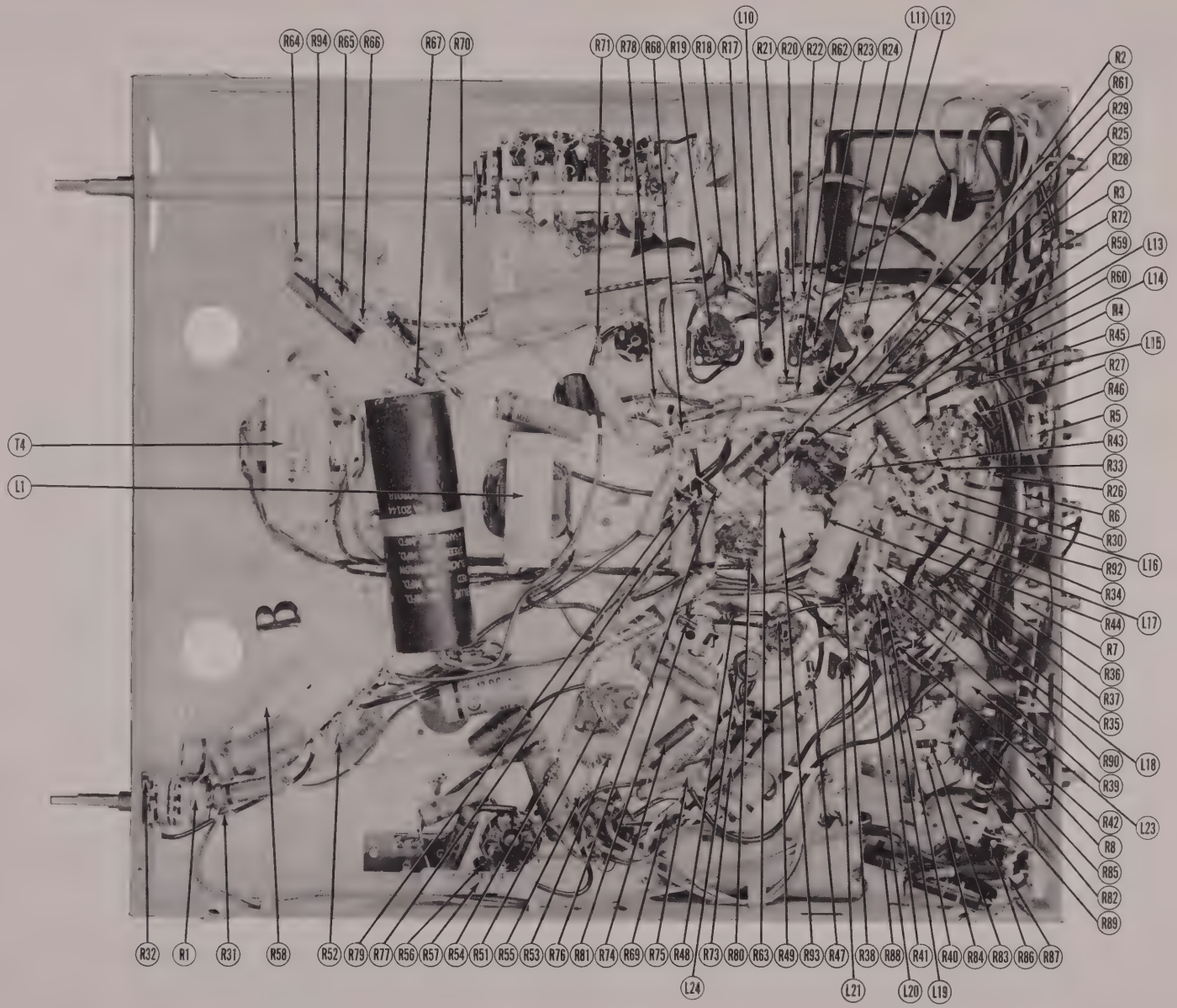
Adjust the horizontal size slug (B3) until the picture fills the mask horizontally.

Adjust the horizontal linearity slug (B4) until the picture is symmetrical from left to right. Slight readjustment of B2 may be necessary for optimum results.

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove nine wood screws holding rear cover in place. Remove rear cover.
3. Remove interlock switching arrangement.
4. Disconnect built-in antenna.
5. Remove antenna terminal strip.
6. Disconnect speaker at chassis.
7. Remove four 9/32" hex head bolts from chassis. Remove chassis.
8. Remove four 11/32" hex nuts from speaker. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6AG5	6AG5	7BK	
V2	Converter	[illegible]	6J6	7BF	
V3	1st Video IF	6AU6	6AU6	7BK	
V4	2nd Video IF	6AU6	6AU6	7BK	
V5	3rd Video IF	6AU6	6AU6	7BK	
V6	Video Det. -AGC Rect.	6AL5	6AL5	6BT	
V7	Video Amp.	12BH7	12BH7	9A	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Det. -AF Amp.	6T8	6T8	9E	Ch.110.700-10, -40 Uses 6AL5 and 6SQ7
V10	Audio Output	6V6GT	6V6GT	7AC	
V11	DC Rest. -Sync. Clipper -Sync. Amp. -Phase Inv.	12BH7	12BH7	9A	
V12	Vert. Osc. -Vert. Amp.	12BH7	12BH7	9A	
V13	Hor. Phase Det.	6AL5	6AL5	6BT	
V14	Hor. Mult.	12BH7	12BH7	9A	
V15	Hor. Output	6BQ6GT	6BQ6GT	6AM	
V16	Damper	6W4GT	6W4GT	4CG	
V17	HV Rect.	1X2	1X2	7CB	
V18	LV Rect.	5U4G	5U4G	5T	
V19a	Picture Tube	16RP4	16RP4	12D	
b	Picture Tube	19BP4	19BP4	12D	Used in Ch. 100.700-40

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	A20144	E59C21		UP4445		TVL-3787	Filter-Red
B	40	450				UP2345		TVA-1709	Filter-Blue
C	20	450							Filter-Green
D	20	450							Filter-Orange
C2A	10	450	A20135	E59C18		UPT11145		TVL-3776	Vert. Osc. Dec. -Red
B	10	450							Vert. Output Dec. -Yel.
C	10	450							Decoupling-Blue
C3	25	12	A20147	PRS250/20		BR252A		TVA-1205	Hor. Cent. Cont. Byp.
C4	100	12	A20141	PRS25/100		BRH121A		TVA-1130	V. Amp. Cath.
C5	100	12	A20141	PRS25/100		BRH121A		TVA-1130	V. Amp. Cath.
C6	1	50	A20138	PRS150/4		BR145		TVA-1300	Stabilizing Cap.
C7	100	25	A20130	PRS50/100		BRH251A		TVA-1207	Vert. Output Cath.
C8	10	250	A20145	PRS350/12		BR1025		TVA-1504	Vert. Output Dec.
C9	10	25	A20137	PRS25/10		BR102A		TVA-1204	Hor. Output Cath.
C10	25			SI5	D6-150		GP1K-15	19C22	RF Coupling
C11	1500			BPD-0015	DD-152		801-0015	29C8	AGC Filter
C12	680			SI680	D6-681		GP2K-680	19C17	RF Amp. Dec.
C13	470			SI470	D6-471		GP2K-470	19C15	RF Amp. Dec.
C14	1				TCZ-1				RF Coupling
C15	.5				TCZ-.5				RF Coupling
C16	1.8								RF Coupling
C17	470			SI470	D6-471		GP2K-470	19C15	Conv. Grid Filter
C18	1.5			SIL.5NPO	TCZ-1.5		NPOK-1.5	19C22	Osc. Coupling
C19	10			SI10NPO	TCZ-10		NPOK-10	19C3	Osc. Grid Cap.
C20	3			SI3NPO	TCZ-3.3		NPOK-3		Osc. Feedback
C21A	1000			BPD-2 x 001	DD-2-102		812-2 x 001	29C7	RF Bypass
B	1000								Conv. Fil. Bypass
C22	10			SI10NPO	TCZ-10		NPOK-10	19C3	Fixed Trimmer
C23	270	[illegible]		1468-00025	D6-271		GP2K-270	1FM-325	IF Coupling
C24A	1500		A19147	BPD-2 x 0015	DD-2-153	1W5D15	812-2 x 0015	29C6	AGC Filter
B	1500					1W5D15			AGC Filter
C25	.25	200	A194-87	P488-25		GT2P25		2TM-P25	AGC Filter
C26A	1500		A19147	BPD-2 x 0015	DD-2-152	1W5D15	812-2 x 0015	29C6	1st V. IF Dec.
B	1500					1W5D15			1st V. IF Fil.
C27	270	500	A190-133	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	IF Coupling
C28A	1500		A19147	BPD-2 x 0015	DD-2-152	1W5D15	812-2 x 0015	29C6	2nd V. IF Dec.
B	1500					1W5D15			2nd V. IF Fil.
C29	270	500	A190-133	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	IF Coupling
C30A	1500		A19147	BPD 2 x 0015	DD-2-152	1W5D15	812-2 x 0015	29C6	3rd V. IF Dec.
B	1500					1W5D15			3rd V. IF Fil.
C31	1500		A19148	BPD-0015	DD-152	1W5D15	801-0015	29C8	3rd V. IF Cath.
C32	270	500	A190-133	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	IF Coupling
C33	47		A555-113-2	SI47	D6-470	5W5Q5	GP1K-47	19C25	IF Coupling *
C34	22	500	A555-106	SI22	D6-220	5W5Q25	GP1K-22	19C23	AGC Filter
C35	5		A555-100	[illegible]	TCZ-4.7	5W5V5	GP1K-5	MS-55	V. Diode Filter
C36	.01	600	A194-155	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Video Coupling
C37	390	500	A190-137	1468-0004	D6-391	5W5T4	GP2K-390	1FM-34	V. Amp. Cath.
C38	.1	[illegible]		P688-1	DF-104	PTE4P1		2TM-P1	AFC Filter
C39	680	500	A190-143	SI680	D6-681	1W5T7	GP2K-680	1FM-37	Video Coupling
C40	1500		A19148	BPD-0015	DD-152	1W5D15	801-0015	29C8	V. Det. AGC Fil.
C41	.05	[illegible]	A194-160	P688-05	DF-503	PTE6S5		6TM-S5	Pic. Tube Cath.
C42	5		A555-100	SI5	TCZ-4.7	5W5V5	GP1K-5	MS-55	S. IF Coupling
C43	47	500		1469-00005	TCZ-47	5R5Q5	NPOM-50	MS-45	Fixed Trimmer
C44	47		A555-113-2	SI47	D6-470	5W5Q5	GP1K-47	19C25	S. IF Coupling
C45	1500		A19148	BPD-0015	DD-152	1W5D15	801-0015	29C8	S. IF Dec.
C46	.005	600	A194-151	P688-005	D6-502	PTE6D5	811-005	6TM-D5	S. IF Screen
C47	.001	600	A194-145	P688-001	D6-102	PTE6D1	GP2L-001	6TM-D1	Diode Load Cap.
C48	.001	600	A194-145	P688-001	D6-102	PTE6D1	GP2L-001	6TM-D1	De-emphasis
C49	.05	600	A194-160	P688-05	DF-503	PTE6S5		6TM-S5	Audio Coupling
C50	.005	600	A194-151	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Audio Coupling
C51	.001	600	A194-145	P688-001	D6-102	PTE6D1	GP2L-001	6TM-D1	De-emphasis
C52	.05	600	A194-160	P688-05	DF-503	PTE6S5		6TM-S5	Audio Coupling
C53	.005	600	A194-151	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Output Plate Byp.
C54	.005	600	A194-151	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Output Plate Byp.
C55	.005	600	A194-151	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Integrator Net.
C56	.01	600	A194-155	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Integrator Net.
C57	.005	600	A194-151	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Integrator Net.
C58	4700	500	A192-163	[illegible]-005	D6-472	1D5D5	GP2M-0047	1FM-25	Vert. Osc. Grid
C59	.05	600	A194-160	P688-05		PTE6S5		6TM-S5	Vert. Discharge

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C60	.01	600	A194-155	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Vert. Sweep Coupling
C61	.001	600	A194-145	P688-001	D6-102	PTE6D1	GP2L-001	6TM-D1	Hor. Sync. Coupling
C62	.001	600	A194-145	P688-001	D6-102	PTE6D1	GP2L-001	6TM-D1	Hor. Sync. Coupling
C63	.005	600	A194-151	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Hor. Feedback
C64	.005	600	A194-151	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Hor. Feedback
C65	.005	600	A194-151	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Voltage Divider
C66	.005	600	A194-151	P688-005	D6-502	PTE6D5	811-005	6TM-D5	AFC Filter
C67	.1	200	A194-66	P388-1	DF-104	PTE4P1		2TM-P1	AFC Filter
C68	390	500	A190-137	1468-0004	D6-391	5W5T4	GP2K-390	1FM-34	Hor. MV Feedback
C69	3900	500	A195-261	1464-004		1DR5D4		MS-24	Fixed Trimmer
C70	390	500	A190-137	1468-0004	D6-391	5W5T4	GP2K-390	1FM-34	Hor. Discharge
C71	270	500	A190-133	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	Hor. Sweep Coupling
C72	10	2500	A19146						Hor. Feedback
C73	10	2500	A19146						Hor. Feedback
C74	.05	600	A194-160	P688-05	DF-503	PTE6S5		6TM-S5	Hor. Output Screen
C75	.05	600	A194-160	P688-05		PTE6S5		6TM-S5	Damper Filter
C76	.1	600	A194-162	P688-1		PTE6P1		6TM-P1	Damper Filter
C77	500	20000	A1998-2	HV20B	TV1-502				HV Filter
C78	.01	600	A19106	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Line Filter
C79	.01	600	A19106	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Line Filter

* Not used in all models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	IRC * PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	10KΩ	½		Concentrikit			
B	250KΩ	½	A24109	B17-116 *	RTV-228	SBB-624-S	Contrast control-panel
C	Shaft End			B13-130 *			Volume control-rear
D	Switch			E-187 *			Attach per instructions in "Concentrikit".
				76-1 *			Attach per instructions in "Concentrikit".
R2A	3000Ω	½	A24114	QU-112	AM-15-S	AN-7	Vert. linearity control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R2A per instructions
R3A	5 Meg.	½	A24111	QU-141	AG-85-S	AN-87	Height control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R3A per instructions
R4A	1 Meg.	½	A24112	QU-137	AG-81-S	AN-69	Vert. hold control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R4A per instructions
R5A	100KΩ	½	A24110	QU-128	AG-49-S	AN-40	Brightness control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R5A per instructions
R6	100Ω	2	A24116	W-100	43-100	VK-121	Horiz. centering control-Wire Wound
R7	2500Ω	4	A24113	W-20 x10	RTV-183	SVP-988	Focus control-Wire Wound
R8	20Ω	2	A24118		RTV-3	SVT-901	Vert. centering control-center tapped-Wire Wound

* Additonal parts to be used with "Concentrikit".

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED.
R9	10KΩ	½			RF Amp. Grid
R10	4700Ω	½		BTS-4700	RF Coil Shunt
R11	18KΩ 20%	½			RF Amp. Plate Coil Shunt
R12	2500Ω	½		BTS-2200	RF Amp. Decoupling
R13	270KΩ 20%	½			Conv. Grid Coil Shunt
R14	15KΩ 20%	½			Conv. Plate
R15	22KΩ 20%	½			Osc. Grid
R16	4700Ω	½		BTS-4700	Osc. Plate
R17	3.3 Meg.	½		BTS-3.3 Meg.	AGC Network-See Note 1
R18	8200Ω	½	A231-1171		1st Video IF Amp. Grid
R19	82Ω	½	A231-1123	BTS-82	1st Video IF Amp. Cathode
R20	330Ω	½	A231-1137	BTS-330	AGC Network
R21	82Ω	½	A231-1123	BTS-82	Decoupling
R22	22KΩ	½	A231-1181		2nd Video IF Amp. Grid
R23	82Ω	½	A231-1123	BTS-82	2nd Video IF Amp. Cathode
R24	8200Ω	1	A232-1171		2nd Video IF Amp. Plate
R25	82Ω 20%	½	A231-1123	BTS-82	2nd Video IF Amp. Decoupling
R26	1 Meg.	½	A231-1231	BTS-1 Meg.	AGC Network-See Note 2
R27	3.2 Meg.	½		BTA-2.2 Meg.	AGC Rectifier Diode Load
R28	82Ω	½	A231-1123	BTS-82	3rd Video IF Amp. Cathode
R29	82Ω	½	A231-1123	BTS-82	Decoupling
R30	100KΩ	½	A231-1197	BTS-100K	AGC Rectifier Diode Load
R31	47KΩ	½	A231-1189	BTS-47K	Voltage Divider
R32	1000Ω	½		BTS-1000	Voltage Divider-See Note 1
R33	10KΩ	½	A231-1173	BTS-10K	Isolation
R34	4700Ω	½	A231-1165	BTS-4700	Video Det. Diode Load
R35	3.3 Meg.	½	A231-1233	BTS-3.3 Meg.	Video Amp. Grid-See Note 3
R36	560Ω	½	A231-1143	BTS-560	Video Amp. Cathode
R37	560Ω	½	A231-1143	BTS-560	Video Amp. Cathode
R38	2200Ω 20%	2	A232-1157	BTB-2200	Video Amp. Plate
R39	1 Meg.	½	A231-1231	BTS-1 Meg.	Video Amp. Grid
R40	330Ω	½	A231-1137	BTS-330	Video Amp. Cathode
R41	330Ω	½	A231-1137	BTS-330	Video Amp. Cathode-See Note 4
R42	4700Ω	2	A233-1165	BTB-4700	Video Amp. Plate
R43	1800Ω	½	A231-1155	BTS-1800	Picture Tube Grid-See Note 5
R44	270KΩ	½	A231-1207	BTS-270K	DC Restorer Load
R45	270KΩ	½	A231-1207	BTS-270K	Picture Tube Cathode
R46	8200Ω	½	A231-1171	BTS-8200	Voltage Divider
R47	100KΩ	½	A231-1197		Sound IF Amp. Grid
R48	100KΩ	½	A231-1197		Sound IF Amp. Screen
R49	1800Ω	½	A231-1155	BTS-1800	Sound IF Amp. Decoupling
R50	22KΩ	½	A231-1181	BTS-22K	Voltage Divider-See Note 1
R51	47KΩ	½	A231-1189	BTS-47K	Ratio Det. Diode Load
R52	47KΩ	½	A231-1189	BTS-47K	De-emphasis
R53	3.3 Meg.	½	A231-1233	BTS-3.3 Meg.	AF Amp. Grid
R54	470KΩ	½	A231-1213	BTS-470K	AF Amp. Plate
R55	470KΩ	½	A231-1213	BTS-470K	Audio Output Grid
R56	330Ω	1	A232-1137	BTA-330	Audio Output Cathode

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	IDENTIFICATION CODES
R57	3250Ω	7	A21111		Decoupling-Wire Wound
R58	2500Ω	15	A21110	2D-2500	Filter-Wire Wound
R59	1 Meg.	½	A231-1221	BTS-1 Meg.	Sync. Sep. Grid-See Note 6
R60	2700Ω 20%	½	A231-1159	BTS-2700	Sync. Sep. Cathode
R61	3900Ω	½	A231-1163	BTS-3900	Sync. Sep. Plate
R62	3900Ω	½	A231-1163	BTS-3900	Sync. Sep. Plate
R63	22KΩ	½	A231-1181	BTS-22K	Integrator
R64	3900Ω	½	A231-1163	BTS-3900	Differentiator
R65	22KΩ	½	A231-1181	BTS-22K	Integrator
R66	8200Ω	½	A231-1171	BTS-8200	Integrator
R67	1.2 Meg.	½		BTS-1.2 Meg.	Vert. Osc. Grid-See Note 7
R68	470KΩ	½	A231-1213	BTS-470K	Vert. Osc. Plate
R69	47KΩ	½	A231-1189	BTS-47K	Vert. Osc. Plate Decoupling
R70	3900Ω	½	A231-1163	BTS-3900	Vert. Peaking
R71	3.3 Meg.	½	A231-1233	BTS-3.3 Meg.	Vert. Output Grid
R72	330Ω	½	A231-1137	BTS-330	Vert. Output Cathode
R73	3300Ω	2	A233-1137	BTB-3300	Vert. Output Plate Decoupling
R74	47KΩ	2	A233-1189	BTB-47K	Voltage Divider
R75	150KΩ	2	A233-1201	BTB-150K	Voltage Divider
R76	100KΩ	½	A231-1197	BTS-100K	Horiz. Phase Det. Diode Load
R77	100KΩ	2	A233-1197	BTB-100K	Horiz. Phase Det. Diode Load
R78	3.3 Meg.	½	A231-1233	BTS-3.3 Meg.	Horiz. Phase Det. Diode Load
R79	470KΩ	½	A231-1213	BTS-470K	Horiz. AFC Filter Network
R80	2700Ω	½	A231-1159	BTS-2700	Feedback Network
R81	2700Ω	½	A231-1159	BTS-2700	Feedback Network-See Note 8
R82	3900Ω	½	A231-1163	BTS-3900	Horiz. MV Plate
R83	2700Ω	½	A231-1159	BTS-2700	Horiz. MV Cathode
R84	100KΩ	½	A231-1197	BTS-100K	Horiz. MV Grid
R85	270KΩ	½	A231-1207	BTS-270K	Horiz. MV Plate
R86	82Ω	½	A231-1123		Parasitic Supp.
R87	470KΩ	½	A231-1213	BTS-470K	Horiz. Output Grid
R88	150Ω	2	A233-1129	BW-2-150	Horiz. Output Cathode
R89	4700Ω	2	A233-1165	BTB-4700	Horiz. Output Screen
R90	4700Ω	2	A233-1165	BTB-4700	Horiz. Output Screen
R91	1 Meg.	2	A233-1221		HV Filter
R92	82Ω	½	A231-1123	BTS-82	Focus Coil Shunt
R93	1.2Ω	1	A23151	BW-1-1.2	Filament Dropping-Wire Wound
R94	60Ω	10	A21107	1 3/4A-50	Surge Limiter-Wire Wound-See Note 9

Note 1. Not used in all models.
Note 2. Some models use 2 Meg. resistor in this application.
Note 3. Some models use 1 Meg. resistor in this application.
Note 4. Some models use 560Ω resistor in this application.
Note 5. Some models use 3900Ω resistor in this application.
Note 6. Some models use 3.3 Meg. resistor in this application.
Note 7. Some models use 1.5 Meg. resistor in this application.
Note 8. Some models use 68000Ω resistor in this application.
Note 9. Some models use resistors in series to obtain desired value.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ 1.95A	720VCT .240ADC	5VAC @ 3A	6.3VAC @ 7.5A SEC. 4 6.3VAC @ 1.2A	A10109		P-3069	

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	160Ω	136Ω	A10106	A-8111 ①	A-3000 ①	TBO-1 ①	Vert. Block Osc. Trans
T3	260Ω	SEC. 1	A10104				Hor. Output Trans.
	Tap @ 58Ω	19Ω Tap ④ 130 & 10					
		SEC. 2 0Ω					
T4	665Ω	6.7Ω	A10115	A-8112 ①	A-3038	TBO-5	Vert. Output Trans.
T5A	14Ω		A26278-2	DY-7	MD-70F		Hor. Deflection Coil
B	78Ω						Vert. Deflection Coil
T6	1000Ω		A28282				Focus Coil

① Drill one new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T7	3.8KΩ	3.4Ω	350Ω	.7Ω	Part of SPKR	A-3849 ①	A-3026	RO-301 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS: FIELD RES.	RATINGS: V. C. IMP.	REPLACEMENT DATA: SILVERTONE PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1	[illegible]	3.4Ω	A58121 A58124 ② A5866 ③	10J12	10A31	② 8"PM- Used in models 131, 131A ③ 5"PM- Used in models 116, 116A, 162-16
	CONE DIA.	V. C. DIA.				
SP2	9 3/8"	3/4"				

PARTS LIST CONTINUED ON PAGE 15

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT 1000 ~	SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.240A	63Ω	1.5 Henries	A1406	C-2326 ①	C-2974	TR-3300①	① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	IRC PART No.	
L2	Ant. Coil	.1Ω	.1Ω	*			
L3	Ant. Coil	.1Ω	.1Ω	*			
L4	RF Coil	0Ω		*			
L5	Mixer Grid Coil	0Ω		*			
L6	Osc. Coil	0Ω		*			
L7	Osc. Coil	0Ω		*			
L8	Fil. Choke	.3Ω		*		CLA	.47 microhenries
L9	1st Video IF	.7Ω		*			
L10	2nd Video IF	.3Ω		A3392			
L11	Fil. Choke	.3Ω		A28276		CL-1	8.2 microhenries
L12	3rd Video IF	.3Ω		A3392			
L13	RF Choke	2.7Ω		A28253			
L14	Fil. Choke	.3Ω		A28276		CL-1	8.2 microhenries
L15	4th Video IF	.3Ω		A3392			
L16	Peaking	5Ω		A28255-1			Red dot
L17	Peaking	19Ω		A28255-5			Yellow dot
L18	Peaking	10Ω		A28255-2			White dot
L19	Peaking	10Ω		A28255-2			White dot
L20	Peaking	10Ω		A28255-4			Green dot
L21	Sound IF	2Ω		A28286			
L22	Ratio Det. Trans.	4Ω	1.6Ω	A3393			
L23	Horiz. Freq.	95Ω		A28263			
L24	Horiz. Lin.	35Ω		A28259			
L25	Horiz. Size	.5Ω		A28279			

* Part of tuner.

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M1	RF Tuner		
M2	Ion Trap	A54794	
B2	Trimmer	A11772	Horiz. Drive (25-280MMF)

PHOTOFACT* Folder

SPARTON
MODELS 5085, 5086

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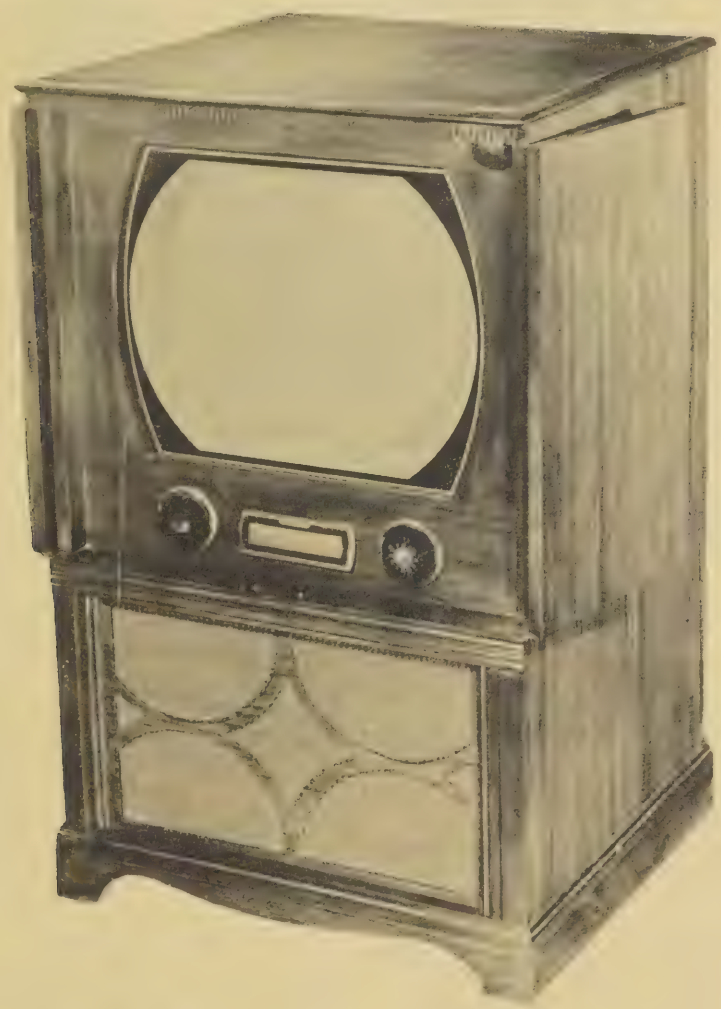

MODEL 5085

SPARTON
MODELS 5085, 5086

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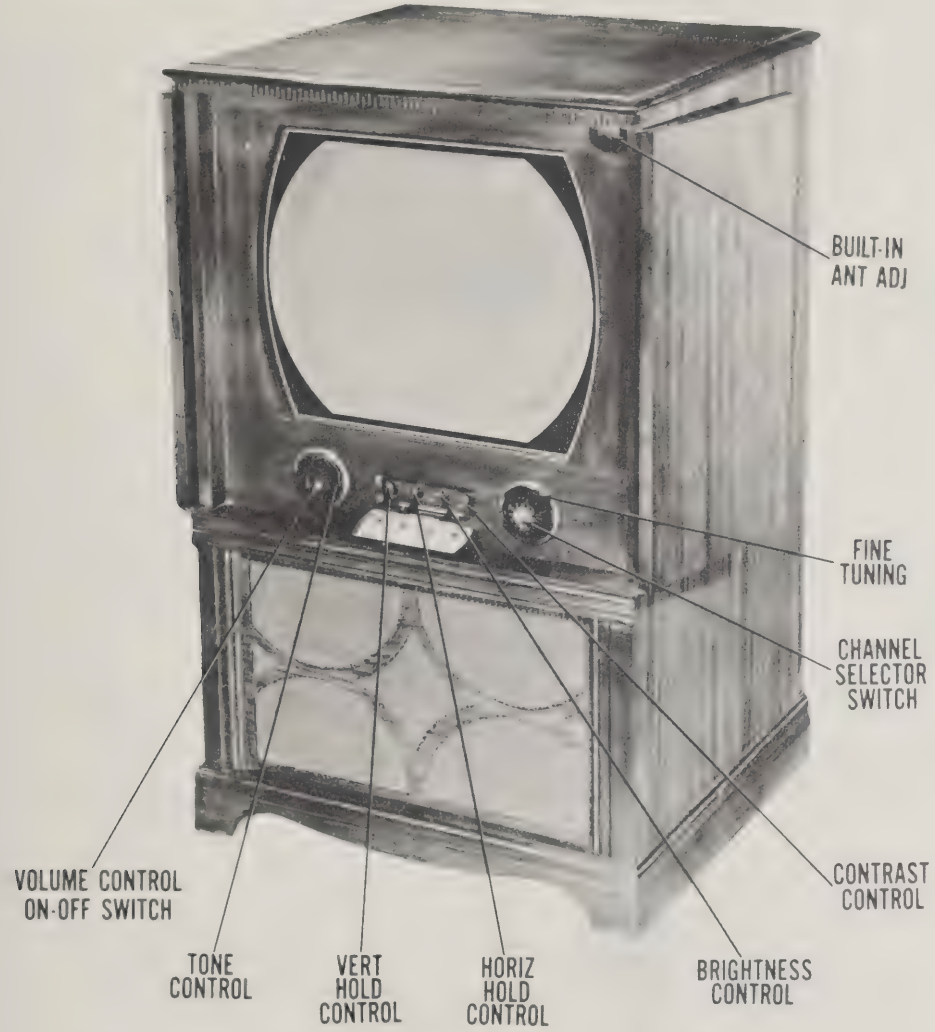
SPARTON
MODELS 5085, 5086



SPARTON
MODELS 5085, 5086

SPARTON MODEL 5085

TRADE NAME	Sparton, Models 5085, 5086 (TV Ch. 25RD190 And Power Ch. 2RD190)
MANUFACTURER	Sparks-Withington Co., Jackson, Mich.
TYPE SET	Television Receiver.
TUBES	Twenty Seven
POWER SUPPLY	110-120 Volts AC - 60 Cycle
RATING	2.4 Amp. @ 117 Volts AC
TUNING RANGE—	Channels 2 thru 13

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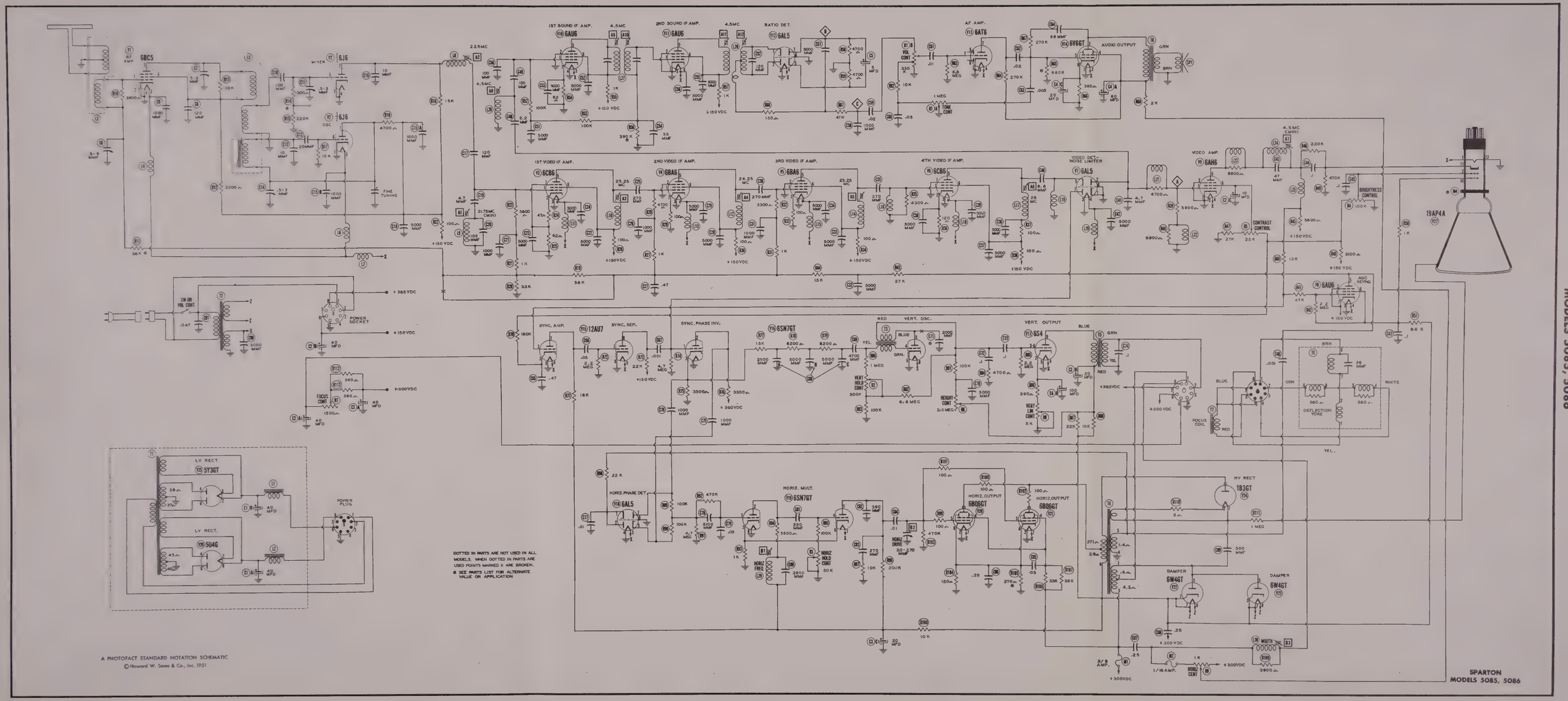
SPARTON
MODELS 5085, 5086
1ST SOUND IF AMP. 6AU6
2ND SOUND IF AMP. 6AU6
RATIO DET. 6AL5
AF AMP. 6AT6
AUDIO OUTPUT 6V6GT
1ST VIDEO IF AMP. 6CB6
2ND VIDEO IF AMP. 6BA6
3RD VIDEO IF AMP. 6BA6
4TH VIDEO IF AMP. 6CB6
VIDEO DET., NOISE LIMITER 6AL5
VIDEO AMP. 6AH6
AGC KEYING 6AU6
19AP4A
SYNC. AMP. 12AU7
SYNC. SEP.
SYNC. PHASE INV. 6SN7GT
VERT. OSC. 6SN7GT
VERT. OUTPUT 6S4
HORIZ. PHASE DET. 6AL5
HORIZ. MULT. 6SN7GT
HORIZ. OUTPUT 6BQ6GT
HV RECT. 1B3GT
DAMPER 6W4GT
LV RECT. 5Y3GT
LV RECT. 5U4G
POWER SOCKET
POWER PLUG
DEFLECTION YOKE
FOCUS COIL
+365VDC
+300VDC
+150VDC
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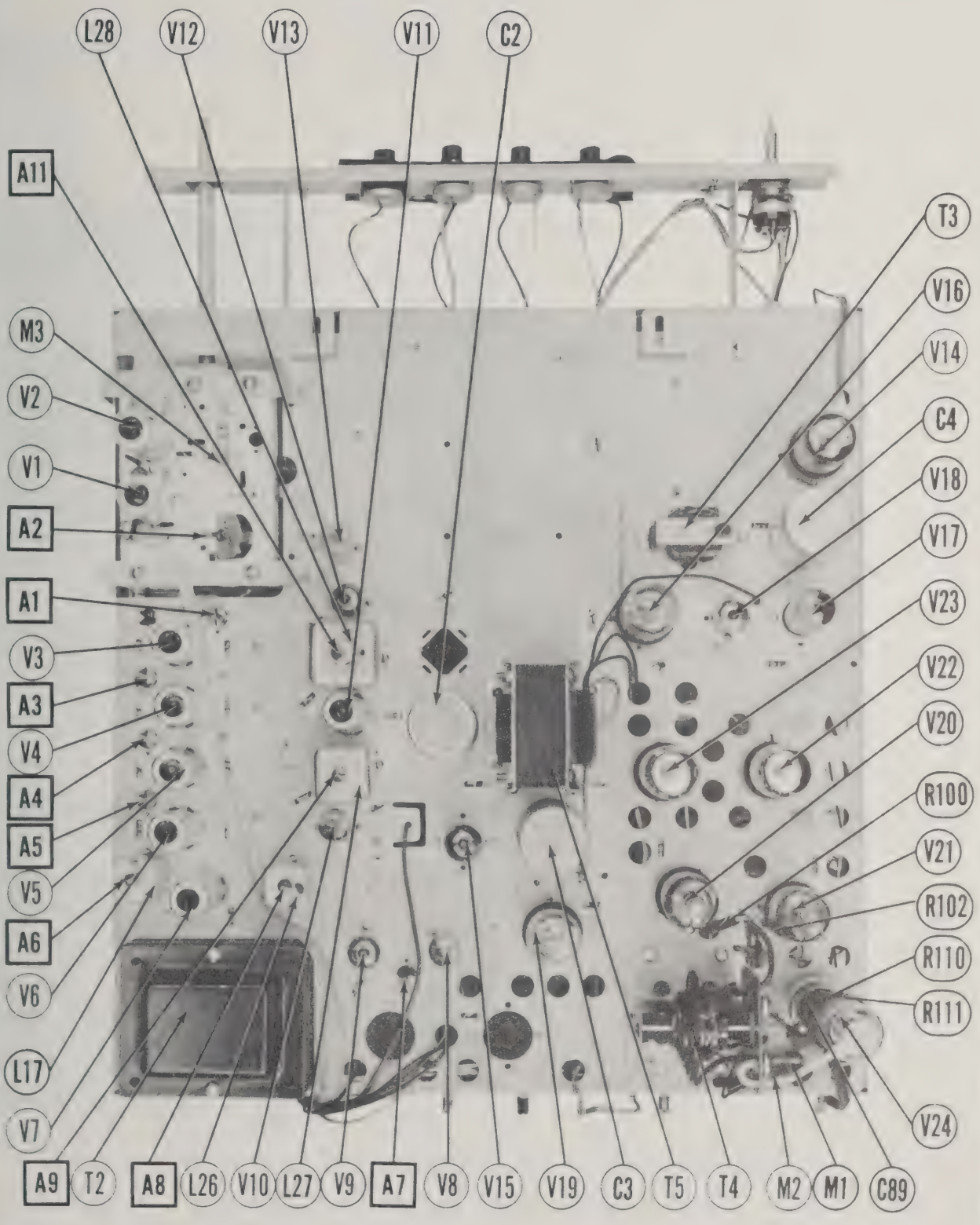
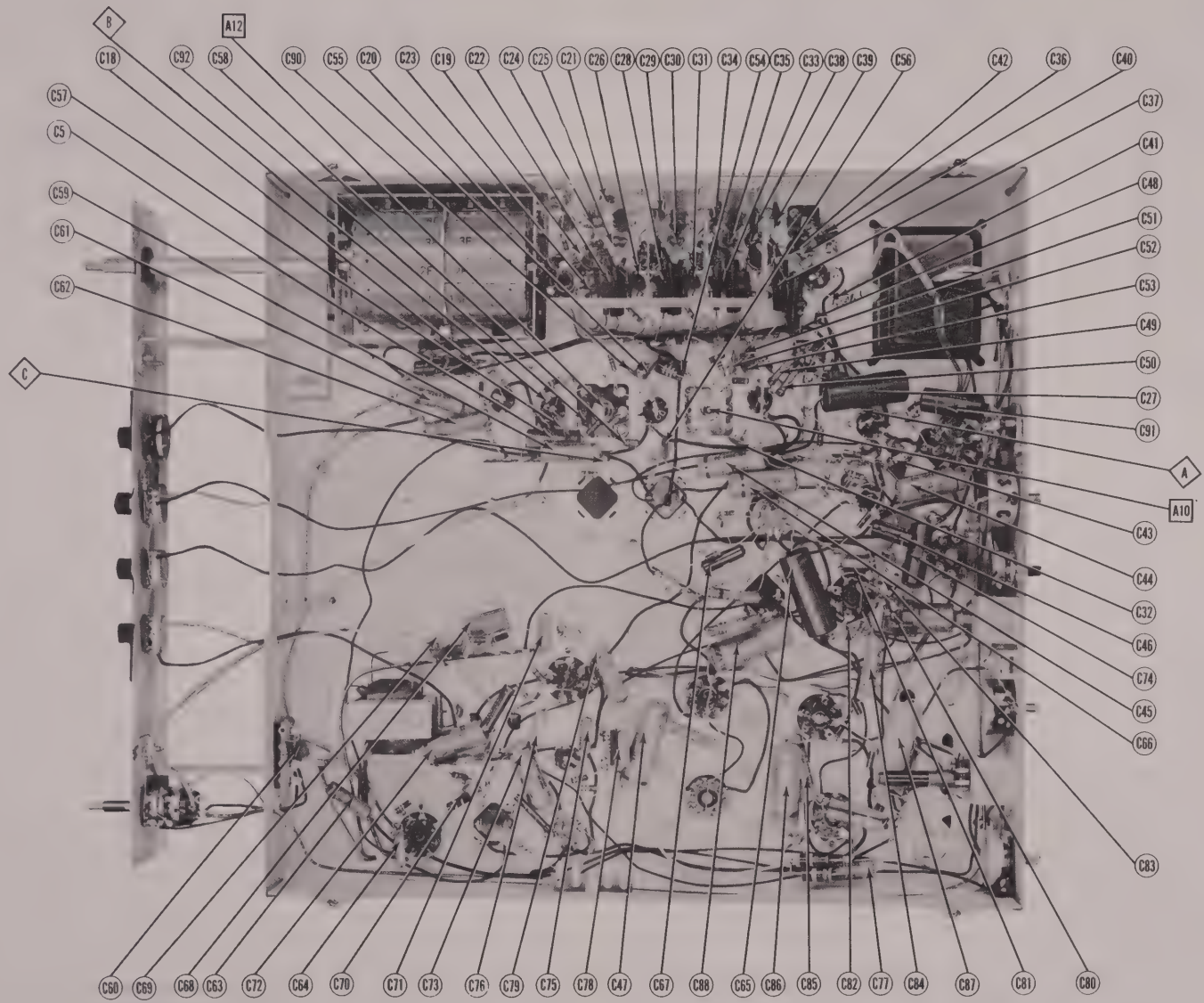
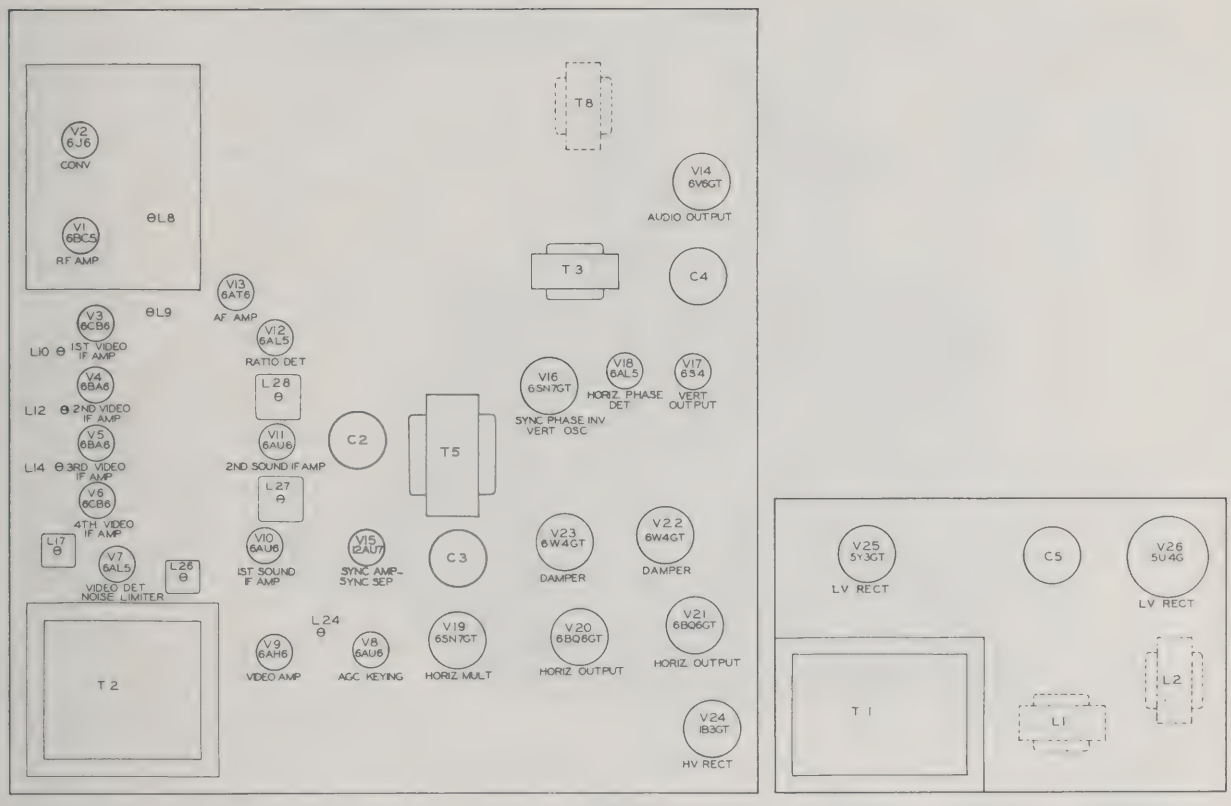
SPARTON
MODELS 5085, 5086



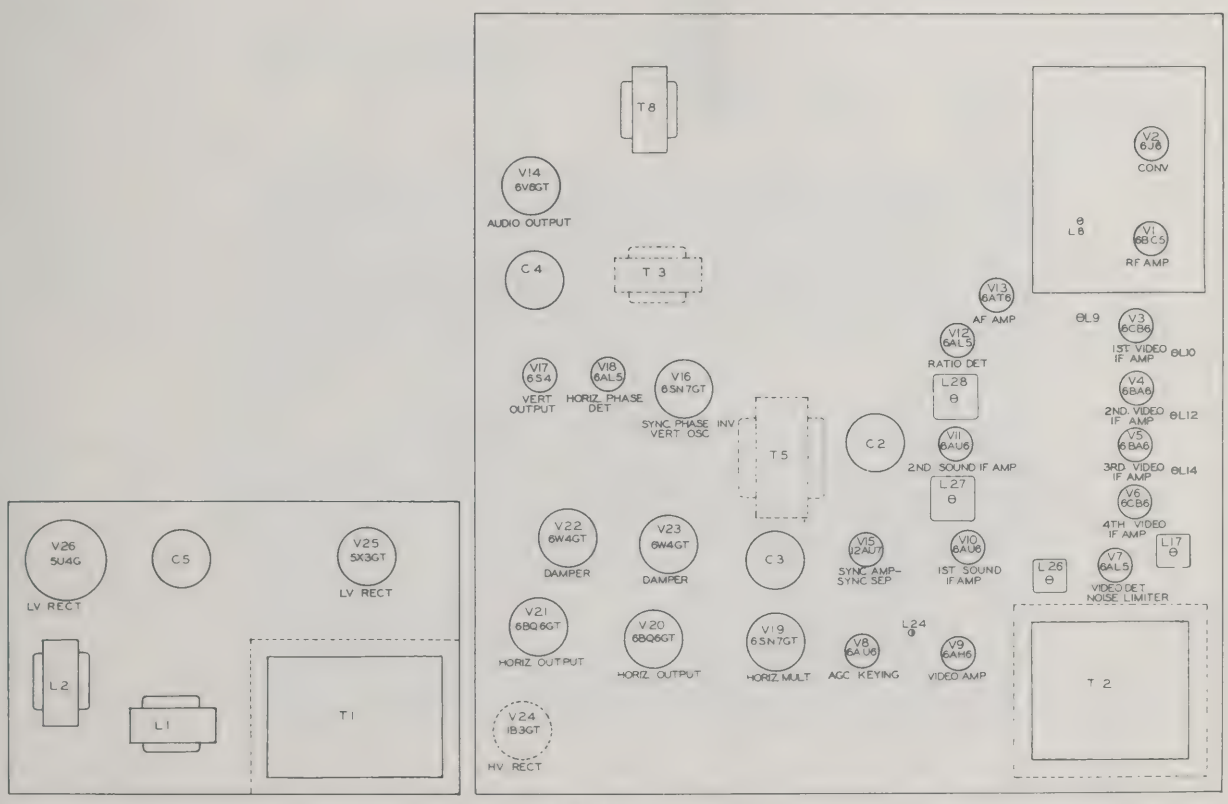
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube, (V19), from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube , (V2), and replace it with a 6J6 which has Pin 1 removed. This will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the negative lead of a 4.5 volt battery to the ungrounded lead of C27. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	21.75MC (Unmod.)	Any	DC probe to Point (A). Common to chassis.	A1	Adjust for MINIMUM deflection.
2.	"	"	22.5MC	"	"	A2	Adjust for maximum deflection.
3.	"	"	25.25MC	"	"	A3	"
4.	"	"	24.25MC	"	"	A4	"
5.	"	"	23.25MC	"	"	A5	"
6.	"	"	26MC	"	"	A6	"

OVERALL VIDEO IF RESPONSE CHECK

Connect a 47KΩ isolating resistor in series with the oscilloscope vertical input lead. Connect a 47MMF capacitor across the vertical input terminals. Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	24.5MC (10MC SWP)	22.7MC 25.5MC 26.25MC	Any	Vert. amp. thru 47KΩ to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A2 thru A6 for proper response.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.01MFD	High side to Point A. Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to Pin 11 of picture tube. Common to chassis.	A7	Adjust for MINIMUM deflection. If VTVM will not read 4.5MC, construct a detector probe similar to figure 2.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
9.	.01MFD	High side to Point A. Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to Point (B). Common to chassis.	A8, A9, A10, A11	Adjust for maximum deflection.
10.	"	"	"	"	DC probe to Point (C). Common to chassis.	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	.01MFD	High side to Point A. Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to Point (B). Low side to chassis.	A8, A9, A10, A11	Disconnect stabilizer capacitor C5. Adjust for maximum amplitude and symmetry as per figure 3.
10.	"	"	"	"	"	Vert. amp. to Point (C). Low side to chassis.	A12	Reconnect capacitor C5. Adjust A12 so 4.5MC occurs at center of crossover lines as per figure 4. SLIGHTLY retouch A 11 for maximum amplitude and straightness of cross-over lines.

THE TUNER PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE ATTEMPTED IN THE FIELD. IF TUNER MIS-ALIGNMENT IS DEFINITELY ESTABLISHED, RETURN THE ENTIRE TUNER, INCLUDING TUBES, TO THE FACTORY.

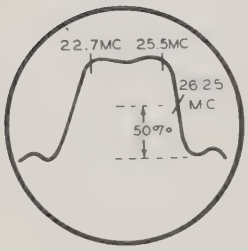


FIG. 1

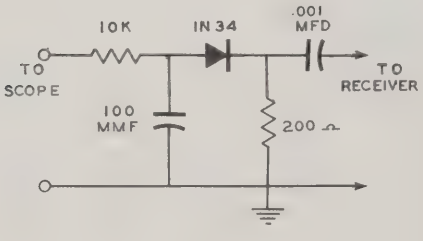


FIG. 2

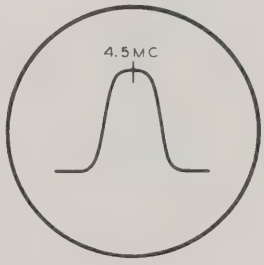


FIG. 3

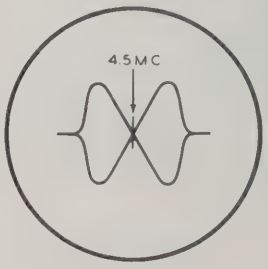
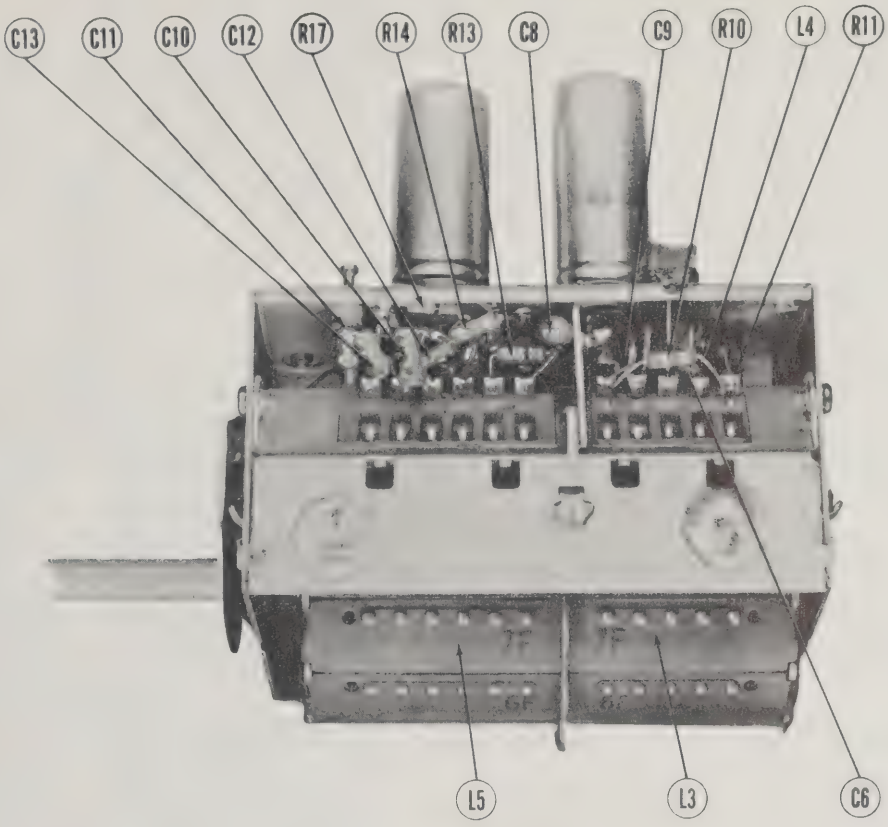
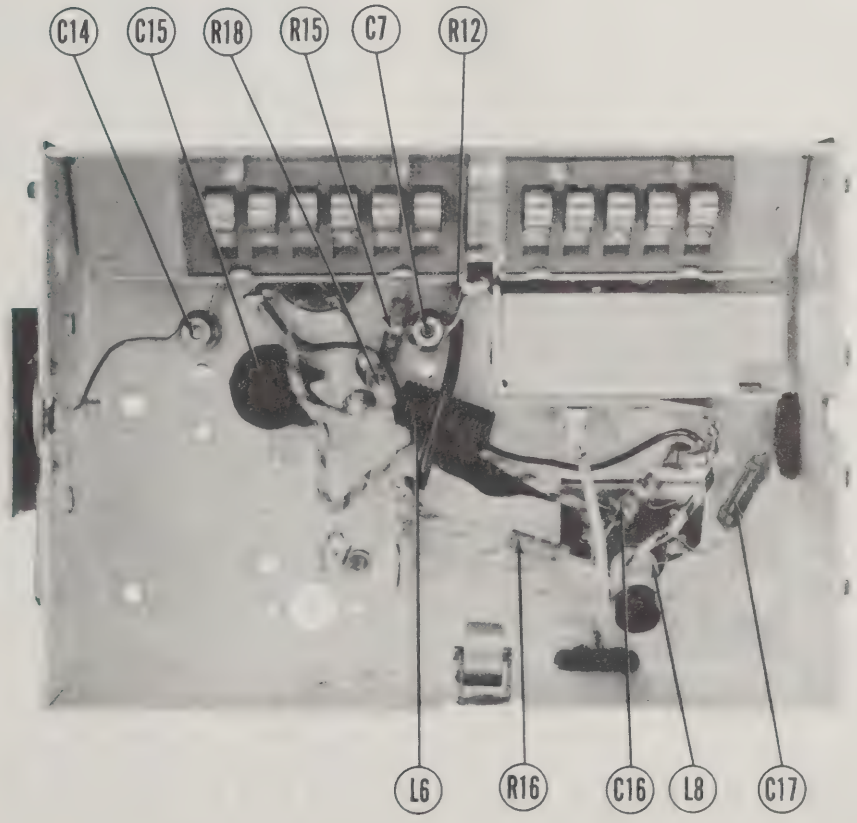


FIG. 4



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	-.2VDC	0V	6.3VAC	0V	140VDC	140VDC	0V		
V 2	6J6	100VDC	90VDC	6.3VAC	0V	-1.2VDC	§-4VDC	0V		
V 3	6CB6	-2VDC	1VDC	0V	6.3VAC	150VDC	150VDC	.6VDC		
V 4	6BA6	-2.8VDC	0V	0V	6.3VAC	150VDC	150VDC	1.3VDC		
V 5	6BA6	-2.8VDC	0V	0V	6.3VAC	150VDC	150VDC	1.3VDC		
V 6	6CB6	0V	1.5VDC	0V	6.3VAC	146VDC	150VDC	0V		
V 7	6AL5	0V	-.2VDC	0V	6.3VAC	0V	0V	-2.5VDC		
V 8	6AU6	140VDC	150VDC	0V	6.3VAC	-4.2VDC	465VDC	150VDC		
V 9	6AH6	-.2VDC	0V	0V	6.3VAC	130VDC	55VDC	0V		
V 10	6AU6	-.3VDC	0V	6.3VAC	0V	140VDC	140VDC	.6VDC		
V 11	6AU6	-.7VDC	0V	0V	6.3VAC	135VDC	135VDC	0V		
V 12	6AL5	-.1VDC	-.1VDC	0V	6.3VAC	.1VDC	0V	-.2VDC		
V 13	6AT6	-.3VDC	0V	0V	6.3VAC	-.6VDC	-.6VDC	70VDC		
V 14	6V6GT	0V	6.3VAC	235VDC	245VDC	0V	0V	0V	13VDC	
V 15	12AU7	†225VDC	†-28VDC	†-10VDC	6.3VAC	6.3VAC	55VDC	-.5VDC	0V	0V
V 16	6SN7GT	-2.5VDC	310VDC	9VDC	-32VDC	85VDC 365VDC	0V	0V	6.3VAC	
V 17	6S4	0V	9VDC 31VDC	0V	6.3VAC	0V	0V	0V	0V	465VDC
V 18	6AL5	.3VDC	.3VDC	6.3VAC	0V	2.9VDC	0V	-2.8VDC		
V 19	6SN7GT	0V	340VDC	12VDC	-6VDC	150VDC	12VDC	0V	6.3VAC	
V 20	6BQ6GT	0V	0V	0V	120VDC	-12VDC	-12VDC	6.3VAC	9VDC	TOP CAP *
V 21	6BQ6GT	0V	0V	0V	120VDC	-12VDC	0V	6.3VAC	9VDC	TOP CAP *
V 22	6W4GT	0V	0V	510VDC	465VDC	310VDC	0V	#510VDC	#510VDC	
V 23	6W4GT	0V	0V	510VDC	0V	310VDC	0V	#510VDC	#510VDC	
V 24	1B3GT	* DO NOT MEASURE								
V 25	5Y3GT	0V	165VDC	0V	185VAC	0V	185VAC	0V	165VDC	
V 26	5U4G	0V	0VDC	0V	375VAC	0V	375VAC	0V	390VDC	
V 27	19AP4A	6.3VAC	0V	PIN 10 460VDC	PIN 11 85VDC	PIN 12 0V				

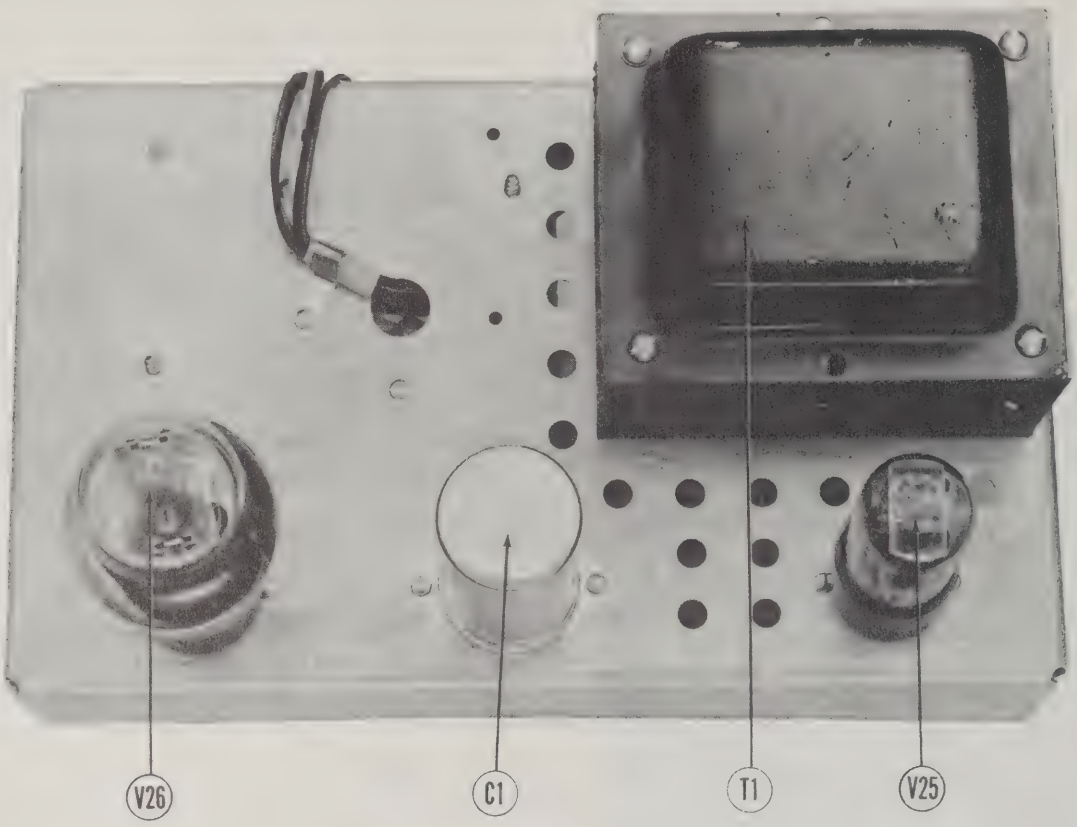
MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
† MEASURED FROM PIN 2 OF V25
# 6.3VAC MEASURED BETWEEN FILAMENTS
§ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

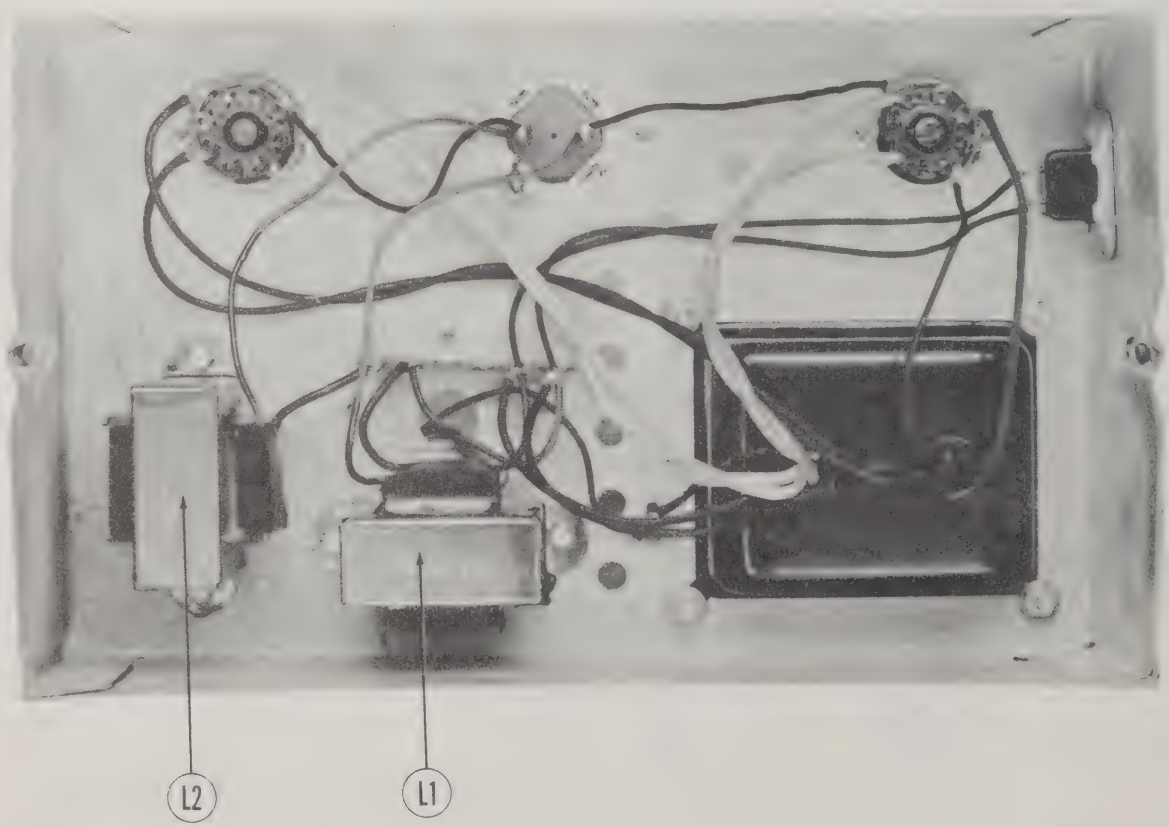
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	140KΩ	0Ω	.1Ω	0Ω	†2.5KΩ	†2.5KΩ	0Ω		
V 2	6J6	†5KΩ	†15KΩ	.1Ω	0Ω	220KΩ	10KΩ	0Ω		
V 3	6CB6	40KΩ	130Ω	0Ω	.1Ω	†220Ω	†220Ω	82Ω		
V 4	6BA6	95KΩ	0Ω	0Ω	.1Ω	†200Ω	†200Ω	100Ω		
V 5	6BA6	95KΩ	0Ω	0Ω	.1Ω	†200Ω	†200Ω	100Ω		
V 6	6CB6	2.5Ω	120Ω	0Ω	.1Ω	†320Ω	†220Ω	0Ω		
V 7	6AL5	0Ω	4KΩ	0Ω	.1Ω	2.5Ω	0Ω	4.7Meg		
V 8	6AU6	†60KΩ	†110Ω	0Ω	.1Ω	130KΩ	¶60KΩ	†110Ω		
V 9	6AH6	4KΩ	0Ω	0Ω	.1Ω	†5.6KΩ	†5KΩ	0Ω		
V 10	6AU6	600KΩ	0Ω	.1Ω	0Ω	†1.2KΩ	†1.2KΩ	82Ω		
V 11	6AU6	400KΩ	0Ω	0Ω	.1Ω	†1.2KΩ	†1.2KΩ	0Ω		
V 12	6AL6	Inf.	Inf.	0Ω	.1Ω	4.7KΩ	0Ω	4.7KΩ		
V 13	6AT6	6.8Meg	0Ω	0Ω	.1Ω	Inf.	Inf.	▲270KΩ		
V 14	6V6GT	Inf.	.1Ω	▲2.7KΩ	▲2.5KΩ	680KΩ	900KΩ	0Ω	380Ω	
V 15	12AU7	¶28KΩ	†15KΩ	†180KΩ	.1Ω	.1Ω	†22KΩ	2.2Meg	0Ω	0Ω
V 16	6SN7GT	4.7Meg	▲3.8KΩ	3.3KΩ	1.6Meg	¶2Meg ¶115KΩ	0Ω	0Ω	.1Ω	
V 17	6S4	Inf.	5.4KΩ 390Ω	2.2Meg	.1Ω	0Ω	2.2Meg	Inf.	Inf.	¶7.5KΩ
V 18	6AL5	22KΩ	22KΩ	.1Ω	0Ω	4.8Meg	0Ω	4.8Meg		
V 19	6SN7GT	5Meg	¶15KΩ	1KΩ	150KΩ	¶210KΩ	1KΩ	.1Ω	0Ω	
V 20	6BQ6GT	Inf.	0Ω	Inf.	▲18KΩ	470KΩ	470KΩ	.1Ω	82Ω	TOP CAP ¶125Ω
V 21	6BQ6GT	Inf.	0Ω	Inf.	▲18KΩ	470KΩ	Inf.	.1Ω	82Ω	TOP CAP ¶125Ω
V 22	6W4GT	Inf.	Inf.	380KΩ	Inf.	▲400Ω	Inf.	380KΩ	380KΩ	
V 23	6W4GT	Inf.	Inf.	380KΩ	450KΩ	▲400Ω	Inf.	380KΩ	380KΩ	
V 24	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP ¶375Ω
V 25	5Y3GT	Inf.	32KΩ	Inf.	36Ω	Inf.	37Ω	Inf.	32KΩ	
V 26	5U4G	Inf.	130KΩ	Inf.	45Ω	Inf.	40Ω	Inf.	130KΩ	
V 27	19AP4A	.1Ω	0Ω	PIN 10 ¶ 60KΩ	PIN 11 170KΩ	PIN 12 0Ω				

MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
† MEASURED FROM PIN 2 OF V25
▲ MEASURED FROM PIN 8 OF V26
¶ MEASURED FROM PIN 3 OF V22

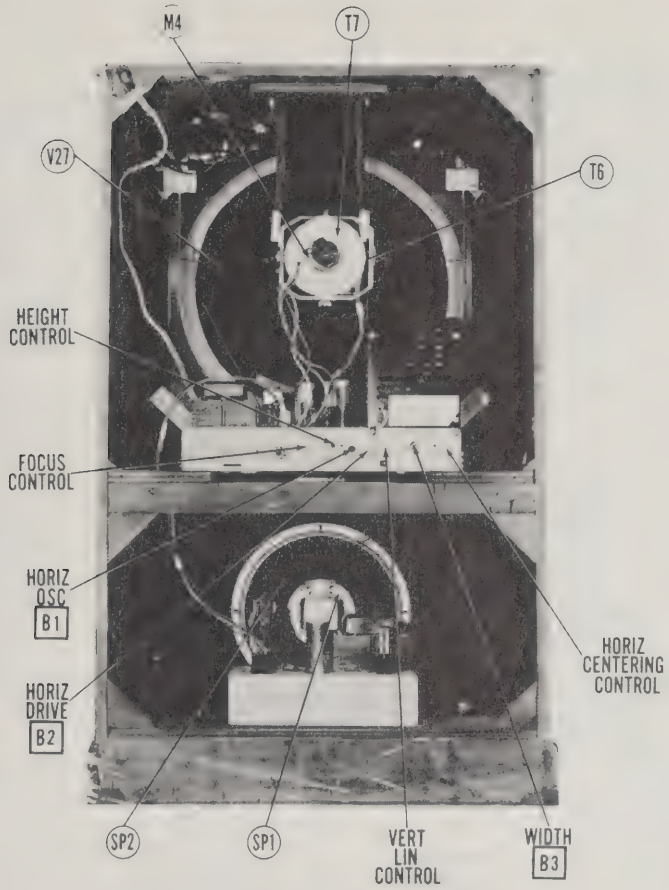
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



POWER SUPPLY CHASSIS-TOP VIEW



POWER SUPPLY CHASSIS-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal frequency slug, (B1), until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer, (B2), counter clockwise as far as possible without crowding the right half of the picture.

Adjust the width slug, (B3), until the picture fills the mask horizontally.

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove seven wood screws from rear cover. Remove rear cover.
3. Disconnect built-in antenna.
4. Remove antenna terminal strip
5. Disconnect plug from power supply chassis.
6. Disconnect speaker.
7. Disconnect picture tube socket.
8. Disconnect yoke plug.
9. Disconnect high voltage lead.
10. Remove four hex head bolts from TV chassis. Remove chassis.
11. Remove two hex head bolts from power supply chassis. Remove power supply.
12. Remove four hex nuts from speaker. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECCESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SPARTON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6BC5	6BC5	7BD	
B	RF Amplifier	6AG5	6AG5	7BD	
V2	Converter	6J6	6J6	7BF	
V3	1st Video IF Amp.	6CB6	6CB6	6CK	
V4	2nd Video IF Amp.	6BA6	6BA6	7BK	
V5	3rd Video IF Amp.	6BA6	6BA6	7BK	
V6	4th Video IF Amp.	6CB6	6CB6	6CK	
V7	Video Detector - Noise Limiter	6AL5	6AL5	6BT	
	AGC Keying	6AU6	6AU6	7BK	
V8	Video Amplifier	6AH6	6AH6	7BK	
V9	1st Sound IF Amp.	6AU6	6AU6	7BK	
V10	2nd Sound IF Amp.	6AU6	6AU6	7BK	
V11	Ratio Detector	6AL5	6AL5	6BT	
V12	AF Amplifier	6AT6	6AT6	7BT	
V13	Audio Output	6V6GT	6V6GT	7AC	
V14	Sync. Amplifier - Sync. Separator	12AU7	12AU7	9A	
V15	Sync. Phase Inv. - Vertical Osc.	6SN7GT	6SN7GT	8BD	
V16	Vertical Output	6S4	6S4	9AC	
V17	Horiz. Phase Det.	6AL5	6AL5	6BT	
V18	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V19	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V20	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V21	Damper	6W4GT	6W4GT	4CG	
V22	Damper	6W4GT	6W4GT	4CG	
V23	Damper	6W4GT	6W4GT	4CG	
V24	HV Rectifier	1B3GT	1B3GT	3C	
V25	LV Rectifier	5Y3GT	5Y3GT	5T	
V26	LV Rectifier	5U4G	5U4G	5T	
V27	Picture Tube	19AP4A	19AP4A	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SPARTON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	475	PA4307-24	AF8X81		UPT4450		TVL-2830	▲ Filter
B	40	250							▲ Filter
C2A	40	475	PA4307-21	AFH86214A		UPT44150		TVL-2830	▲ Filter
B	40	250						TVA-1504	■ Filter
C	10	250							▲ Video Amp. Screen
C3A	40	475		AFH8422J		UPT421145		TVL-4840	▲ Filter
B	20	450							■ Decoupling
C	20	450							▲ Decoupling
C4A	80	450	PA4307-23	AFI6J204B		UPT4445-		TVL-2710	■ Decoupling
B	100	50				VU		TVA-1310	■ Vert. Output Cathode
C	30	50				BR205A			▲ Audio Output Cathode
C5	5	50	PA4308-2	PRS150/4		BR550		TVA-1303	Stabilizing Cap
C6	3-9				829-3				Variable Trimmer
C7	5-3								Variable Trimmer
C8	120			5I120	829-3				
C9	1000		HK36M-102	BPD-001	DD-102	D6-121	GP2K-121	19C29	RF Amp. Decoupling
C10	100			5I100N750	TCN-100	80I-001		19C11	RF Amp. Fil.
C11	5-3				829-3	N750L-101	N750L-101		RF Coupling
C12	30			5I20NPO	TCZ-20				Osc. Grid Cap
C13	10			5I10N750	TCN-10	NPOK-200			Osc. Grid Cap
C14	.5-3				829-3	N750K-100	N750K-100	19C4	Fixed Trimmer
C15A	1000			BPD-2X001	DD-2-102		812-2X001	29C7	Variable Trimmer
B	1000								RF Bypass
C16	10			5I10NPO	TCZ-10		NPOK-100	19C3	Converter Fil.
C17	120			5I120	TCN-120		GP2K-121	19C29	Fixed Trimmer
C18	5000		PA4334-1	BPD-005	DD-502		81I-005	29C1	IF Coupling
C19	4.7			5I4.7NPO	TCZ-4.7		NPOK-4R7		RF Bypass
C20	100			5I100NPO	TCZ-100		NPO-333-101	36C10	IF Coupling
C21	1000		HK36M-102	5I1000	D6-102	1WSD1	GP2L-102	19C1	Fixed Trimmer
C22	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	AGC Filter
C23	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	1st Video IF Decoupling
C24	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	1st Video IF Cathode
C25	270		HK36M-271	5I270	D6-271	5WST25	GP2K-271	19C31	1st Video IF Fil.
C26	1000		HK36M-102	5I1000	D6-102	1WSD1	GP2L-102	19C1	IF Coupling
C27	.47	200	PC42DK-474	P288-47		GT22P5		27M-P47	AGC Filter
C28	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	2nd Video IF Decoupling
C29	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	2 nd Video IF Fil.
C30	270		HK36M-271	5I270	D6-271	5WST25	GP2K-271	19C31	IF Coupling
C31	1000		HK36M-102	5I1000	D6-102	1WSD1	GP2L-102	19C1	AGC Filter
C32	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	AGC Filter
C33	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	3rd Video IF Decoupling
C34	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	3rd Video IF Fil.
C35	270		HK36M-271	5I270	D6-271	5WST25	GP2K-270	19C31	IF Coupling
C36	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	4th Video IF Plate
C37	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	4th Video IF Decoupling
C38	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	4th Video IF Cathode
C39	5000		PA-4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	4th Video IF Fil.
C40	8.8		PA4328-13	SI6.8NPO	TCZ-8.8		NPOK-8R8		IF Coupling
C41	4.7		PA4328-11	5I4.7NPO	TCZ-4.7	5W5V5	NPOK-4R7	MS-55	Video Det. Filter
C42	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	Video Det. Fil.
C43	47				CC30A-470F			29C14	Fixed Trimmer
C44	.1	400	PC40GL-104	P488-1	DF-104	PTE4P1		4TM-P1	Video Coupling
C45	.1	400	PC40GL-104	P488-1	DF-104	PTE4P1		4TM-P1	Picture Tube Grid
C46	.001	600	PC40GM-102	P688-001	D6-102	PTE6D1	GP2L-102	8TM-D1	Horizontal Sweep Coupling
C47	.1	600	PC40GM-104	P688-1	DF-104	PTE6P1		6TM-P1	Decoupling
C48	2.2		PA4326-1		TCZ-2.2				Sound IF Coupling
C49	100		PA4332-3	5I100NPO	TCZ-100	5W5T1	NPO-333-101	36C10	Sound IF Coupling
C50	100		PA4332-3	5I100NPO	TCZ-100	5W5T1	NPO-333-101	36C10	Voltage Divider
C51	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	AGC Filter
C52	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	1st Sound IF Decoupling
C53	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	1st Sound IF Cathode
C54	33	500	MC60E-330	5I33	D6-330	5W5Q3	GP1K-330	19C24	2nd Sound IF Grid
C55	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	2nd Sound IF Decoupling
C56	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	2nd Sound IF Fil.
C57	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	Diode Load Cap
C58	1000		HK36M-102	5I1000	D6-102	1WSD1	GP2L-102	19C1	De-emphasis
C59	.02	400	PC40HL-203	P488-02	DF-203	PTE4S2		4TM-S2	Audio Coupling
C60	.03	200	PC40GK-303	P488-03		PTE6S3		6TM-S3	Tone Comp.

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SPARTON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C61	.01	400	PC40FL-103	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C62	.02	600		P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C63	.005	600	PC40GM-102	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Tone Comp.
C64	68	500	MC60E-680	SI68	D6-680	5W5Q7	GP1K-680	19C10	Tone Comp.
C65	47	600		684-5		GT6P5			Sync. Amp. Cathode
C66	.05	600	PC40GM-503	P688-05	DF-503	PTE6S5		6TM-S5	Sync. Coupling
C67	.001	600	PC40GM-102	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Sync. Coupling
C68A	2000			BPD-002	D6-202	1W5D2	80L-002	29C2	Integrator Net
B	5000		♦	BPD-005	DD-502	1D5D5	81I-005	29C1	Integrator Net
C	5000			BPD-005	DD-502	1D5D5	81I-005	29C1	Integrator Net
C69	4700	500	MC61F-472	1467-005	D6-472	1D5D5	GP2-333-472	1FM-25	Vert. Osc. Grid
C70	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	Vert. Osc. Decoupling
C71	2000	500	MC61E-202	1467-002	D6-202	1W5D2	GP2-333-202	1FM-22	Vert. Osc. Plate *
C72	.1	400	PC40GL-104	P488-1		PTE4P1		4TM-P1	Vertical Discharge
C73	.1	400	PC40GL-104	P488-1	DF-104	PTE4P1		4TM-P1	Vert. Sweep Coupling
C74	.1	400	PC40GL-104	P488-1	DF-104	PTE4P1		4TM-P1	Fixed Trimmer
C75	1000	500	MC61E-102	1467-001	D6-102	1W5D1	GP2L-102	1FM-21	Horiz. Sync. Coupling
C76	1000	500	MC61E-102	1467-001	D6-102	1W5D1	GP2L-102	1FM-21	Horiz. Sync. Coupling
C77	.01	400	PC40FL-103	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Voltage Divider
C78	5100	500	MC61E-512	1467-005	D6-502	1D5D5	81I-005	1FM-25	AFC Filter
C79	.05	200	PC40GK-503	P288-05	DF-503	PTE4S5		2TM-S5	AFC Filter
C80	3900	500	MC63F-392	1464-004		1DR5D4		MS-24	Fixed Trimmer
C81	220	500	MC60E-221	1468-00025	D6-221	5W5T25	GP2K-221	1FM-325	Horiz. MV Feedback
C82	390	500	MC60E-391	1468-0004	D6-391	5W5T4	GP2K-391	1FM-34	Horiz. MV Plate
C83	270	500		1468-00025	D6-271	5W5T25	GP2K-271	1FM-325	Horiz. Discharge
C84	.01	400	PC40FL-103	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Horiz. Sweep Coupling
C85	.05	400	PC40GL-503	P488-05	DF-503	PTE4S5		4TM-S5	Horiz. Output Screen
C86	.25	200	PC40GK-254	P488-25		GT2P25		2TM-P25	Horiz. Output Cathode
C87	.25	400	PC40GL-254	P488-25		GT4P25		4TM-P25	Horiz. Sweep Coupling
C88	.25	400	PC40GL-254	P488-25		GT4P25		4TM-P25	Damper Filter
C89	500	20000	PA4342-1	H20C	TV3-502				HV Filter
C90	5000		PA4334-1	BPD-005	DD-502	1D5D5	81I-005	29C1	Fil. Bypass
C91	.047	600	PC42DM-473	P688-047	DF-503	PTE6S5		6TM-S47	Line Filter
C92	120	200		1469-00025	D6-121	5R515	GP2K-121	MS-31	Line Filter

* Not used in all models.
♦ Items C68A, C68B, C68C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SPARTON PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½	PA4450	Concentrikit			
B	330KΩ	½		Bll-137 ♯			Tone Control - Front
C	Shaft End			B18-132X ♯		8BBT-661-8	Volume Control - Tapped ④ 65KΩ - Rear
D	Switch			E-187 ♯			Attach Per Instructions in "Concentrikit"
R2A	500KΩ	½	PA4451	76-1 ♯			Attach Per Instructions in "Concentrikit"
B	Shaft		Not req.	Qll-133	AG-58-8	B-59	Vertical Hold Control
R3A	50KΩ	½	PA4444	Not req.	F8-3	Not req.	Attach to R2A Per Instructions
B	Shaft		Not req.	Qll-123	AG-44-8	B-31	Horizontal Hold Control
R4A	100KΩ	½	PA4445	Not req.	F8-3	Not req.	Attach to R3A Per Instructions
B	Shaft		Not req.	Qll-128	AG-49-8	B-40	Brightness Control
R5A	25KΩ	½	PA4442-1	Not req.	F8-3	Not req.	Attach to R4A Per Instructions
B	Shaft		Not req.	Qll-120	AM-40-8	B-26	Contrast Control
R6A	2.5Meg	½	PA4426-1	Not req.	F8-3	Not req.	Attach to R5A Per Instructions
B	Shaft		Not req.	Qll-239	AG-84-8	AN-83	Height Control
R7	1500Ω	4	PA4441	W-5000	FK8-1/4	AK-1	Attach to R6A Per Instructions
R8	5000Ω	2	PA4446	W-1000	43-1000	VK-135	Focus Control - Wire Wound
R9	1000Ω	2			43-1000	VK-129	Vertical Linearity Control - Wire Wound
							Horizontal Centering Control - Wire Wound

♯ Additional parts to be used with "Concentrikit".

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SPARTON PART No.	IRC PART No.	IDENTIFICATION CODES: ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R10	3800Ω	½		BTS-3900	Antenna Coil Shunt
R11	56KΩ	½		BTS-56K	AGC Network - See Note 1
R12	2200Ω 20%	½		BTS-2200	RF Amp. Decoupling
R13	10KΩ	½		BTS-10K	RF Coil Shunt
R14	1500Ω	½		BTS-1500	Mixer Grid - See Note 2
R15	220KΩ 20%	½		BTS-220K	Mixer Grid
R16	15KΩ 20%	½			Mixer Plate
R17	10KΩ	½		BTS-10K	Oscillator Grid
R18	4700Ω	½		BTS-4700	Oscillator Plate
R19	56KΩ	½		BTS-56K	AGC Network
R20	33KΩ 20%	½		BTS-33K	AGC Network
R21	1000Ω 20%	½		BTS-1000	AGC Network
R22	100Ω 20%	½		BTS-100	Decoupling
R23	5600Ω	½		BTS-5600	1st Video IF Amp. Grid
R24	47Ω 5%	½			1st Video IF Amp. Cathode
R25	82Ω 5%	½		BTS-82-5%	1st Video IF Amp. Cathode
R26	100Ω 20%	½		BTS-100	1st Video IF Amp. Decoupling
R27	1000Ω 20%	½		BTS-1000	AGC Network
R28	4700Ω 5%	½		BTS-4700-5%	2nd Video IF Amp. Grid
R29	100Ω 5%	½		BTS-100-5%	2nd Video IF Amp. Cathode
R30	100Ω 20%	½		BTS-100	2nd Video IF Amp. Decoupling
R31	1000Ω 20%	½		BTS-1000	AGC Network
R32	3300Ω 5%	½		BTS-3300-5%	3rd Video IF Amp. Grid
R33	100Ω 5%	½		BTS-100-5%	3rd Video IF Amp. Cathode
R34	100Ω 20%	½		BTS-100	3rd Video IF Amp. Decoupling
R35	4300Ω 5%	½			RF Choke Coil Shunt
R36	120Ω	½		BTS-120	4th Video IF Amp. Cathode
R37	100Ω 20%	½		BTS-100	4th Video IF Amp. Plate Decoupling
R38	100Ω 20%	½		BTS-100	4th Video IF Amp. Decoupling
R39	3900Ω 5%	½		BTS-3900-5%	Video Det. Diode Load
R40	6800Ω	½		BTS-6800	Video Peaking Coil Shunt
R41	47KΩ	½		BTS-47K	AGC Network
R42	2.2Meg	½		BTS-2.2Meg	Keyed AGC Grid
R43	27KΩ	½		BTS-27K	AGC Network
R44	15KΩ 5%	½		BTS-15K-5%	AGC Network
R45	5600Ω 5%	1		BTA-5600-5%	Video Amp. Plate
R46	22KΩ	½		BTS-220K	Isolation
R47	27KΩ	½		BTS-27K	Voltage Divider
R48	5100Ω 5%	½			Voltage Divider
R49	470KΩ	½		BTS-470K	Picture Tube Cathode
R50	1000Ω 20%	½		BTS-1000	Acc. Anode Load
R51	68KΩ	1		BTA-68K	Decoupling

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SPARTON PART No.	IRC PART No.	IDENTIFICATION CODES
R52	100KΩ	½		BTS-100K	1st Sound IF Amp. Grid
R53	100KΩ	½		BTS-100K	1st Sound IF Amp. Grid
R54	82Ω	½		BTS-82	1st Sound IF Amp. Cathode
R55	1000Ω	½		BTS-1000	1st Sound IF Amp. Decoupling
R56	390KΩ	½		BTS-390K	2nd Sound IF Amp. Grid - See Note 3
R57	1000Ω	½		BTS-1000	2nd Sound IF Amp. Decoupling
R58	4700Ω 5%	½		BTS-4700-5%	Ratio Det. Diode Load
R59	4700Ω 5%	½		BTS-4700-5%	Ratio Det. Diode Load
R60	150Ω 5%	½		BTS-150-5%	Balancing
R61	47KΩ	½		BTS-47K	De-emphasis
R62	10KΩ	½		BTS-10K	Tone Compensation
R63	6.8Meg	½		BTS-6.8Meg	AF Amp. Grid
R64	270KΩ	½		BTS-270K	AF Amp. Plate
R65	680KΩ	½		BTS-680K	Output Grid - See Note 3
R66	390Ω	½		BTA-390	Output Cathode
R67	270KΩ	½		BTS-270K	Feedback
R68	2000Ω	5		1 3/4A-2000	Decoupling - Wire Wound
R69	10KΩ 5%	½		BTS-10K-5%	Isolation
R70	180KΩ	½		BTS-180K	Sync. Sep. Cathode
R71	18KΩ	½		BTS-18K	Sync. Sep. Plate
R72	2.2Meg 20%	½		BTS-2.2Meg	Sync. Amp. Grid
R73	22KΩ	½		BTS-22K	Sync. Amp. Plate
R74	4.7Meg	½		BTS-4.7Meg	Sync. Phase Inv. Grid
R75	3300Ω 5%	½		BTS-3300-5%	Sync. Phase Inv. Cathode
R76	3300Ω 5%	½		BTS-3300-5%	Sync. Phase Inv. Plate
R77	15KΩ	½		BTS-15K	Integrator
R78	8200Ω	½		BTS-8200	Integrator
R79	8200Ω	½		BTS-8200	Integrator
R80	1Meg	½		BTS-1Meg	Vertical MV Grid
R81	100KΩ	½		BTS-100K	Vertical MV Plate
R82	6.8Meg	½		BTS-6.8Meg	Voltage Divider
R83	100KΩ	½		BTS-100K	Voltage Divider
R84	4700Ω	½		BTS-4700	Vertical Peaking
R85	2.2Meg 20%	½		BTS-2.2Meg	Vertical MV Amp. Grid
R86	390Ω	½		BTS-390	Vertical MV Amp. Cathode
R87	22KΩ	1		BTA-22K	Decoupling
R88	10KΩ	2		BTB-10K	Decoupling
R89	100KΩ	½		BTS-100K	Horizontal Phase Det. Diode Load
R90	100KΩ	½		BTS-100K	Horizontal Phase Det. Diode Load
R91	4.7Meg 20%	½		BTS-4.7Meg	Horizontal Phase Det. Diode Load
R92	470KΩ	½		BTS-470K	Horizontal AFC Filter
R93	1000Ω	½		BTS-1000	Horizontal MV Cathode
R94	5600Ω 5%	½		BTS-5600-5%	Horizontal MV Plate
R95	100KΩ	½		BTS-100K	Horizontal MV Grid
R96	200KΩ	½			Horizontal MV Plate
R97	10KΩ 5%	½		BTS-10K-5%	Horizontal Peaking
R98	22KΩ 20%	1		BTA-22K	Horizontal Feedback
R99	100Ω 20%	1			Parasitic Suppressor
R100	100Ω 20%	1			Parasitic Suppressor
R101	100Ω 20%	1			Parasitic Suppressor
R102	100Ω 20%	1			Parasitic Suppressor
R103	470KΩ	½		BTS-470K	Horizontal Output Grid
R104	120Ω	2		BW-2-120	Horizontal Output Cathode
R105	270Ω	2		BW-2-270	Horizontal Output Cathode - See Note 4
R106	33KΩ	2		BTB-33K	Horizontal Output Screen
R107	39KΩ	2		BTB-39K	Horizontal Output Screen
R108	10KΩ	2		BTB-10K	Decoupling
R109	3900Ω	2		BTB-3900	Width Coil Shunt
R110	5Ω	1			HV Rectifier Filament
R111	1Meg 20%	1			HV Filter
R112	560Ω	2		BTB-560	Focus Coil Shunt
R113	560Ω	2		BTB-560	Focus Coil Shunt
R114	100KΩ	½		BTS-100K	Vertical Oscillator Transformer Shunt - See Note 5

Note 1. Some models use 47KΩ resistor in this application.
Note 2. Some models use 4700Ω resistor in this application.
Note 3. Some models use 470KΩ resistor in this application.
Note 4. Some models use parallel resistor in this application to obtain desired value.
Note 5. Not used in all models.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: SPARTON PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC ④ 1.65A	780VCT .200ADC	400VCT .140ADC	5VAC ④ 2A SEC. 4 5VAC ④ 3A	AB44021-1		P-3067 ②	

② Includes winding for filament transformer.

TRANSFORMER (FILAMENT)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: SPARTON PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T2	117VAC ④ .75A	6.3VAC ④ 2.4A	6.3VAC ④ 10A		AB44022-1			

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	SPARTON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T3	150Ω	820Ω	AB47006-4	A-8111 ①	A-3000	T80-3 ①	Vertical Block Osc. Trans.
T4	83Ω	1.4Ω	PC70010		HV0-6 ③		Horizontal Output Trans.
	Tap 29Ω	SEC. 2 4.9Ω Tap 4.3Ω SEC. 3 0Ω					
T5	870Ω	6.2Ω	AB44062-5	A-8115 ①	A-3035 ①	TS0-1 ①	Vertical Output Trans.
T6A	13Ω			DY-7	MDF-70		Horizontal Deflection Coil
B	83Ω						Vertical Deflection Coil
T7	420Ω		PC70008-1		MF-2		Focus Coil

① Drill one new mounting hole.
③ Use MWC-1 for 2.6 Microhenries winding.

SPARTON
MODELS 5085, 5086

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SPARTON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T8	6.4KΩ	3.5Ω	270Ω	.4Ω	AB44066-3	A-3878 ①	A-3019	R0-13 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	SPARTON PART No.	VIKING PART No.	QUAM PART No.	
SP1	PM	3.5Ω	PC63000-12	12J12	12A4A	
	CONE DIA.	V. C. DIA.				
SP2	11 7/8"	1"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	SPARTON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.140A	110Ω	6 Henries	AB47009-2	C-2304 ①	C-2994	R-7200①	
L2	.200A	110Ω	6 Henries	AB47009-2	C-2325 ①	C-2994		

① Drill one new mounting hole.

COILS (RF-IF)

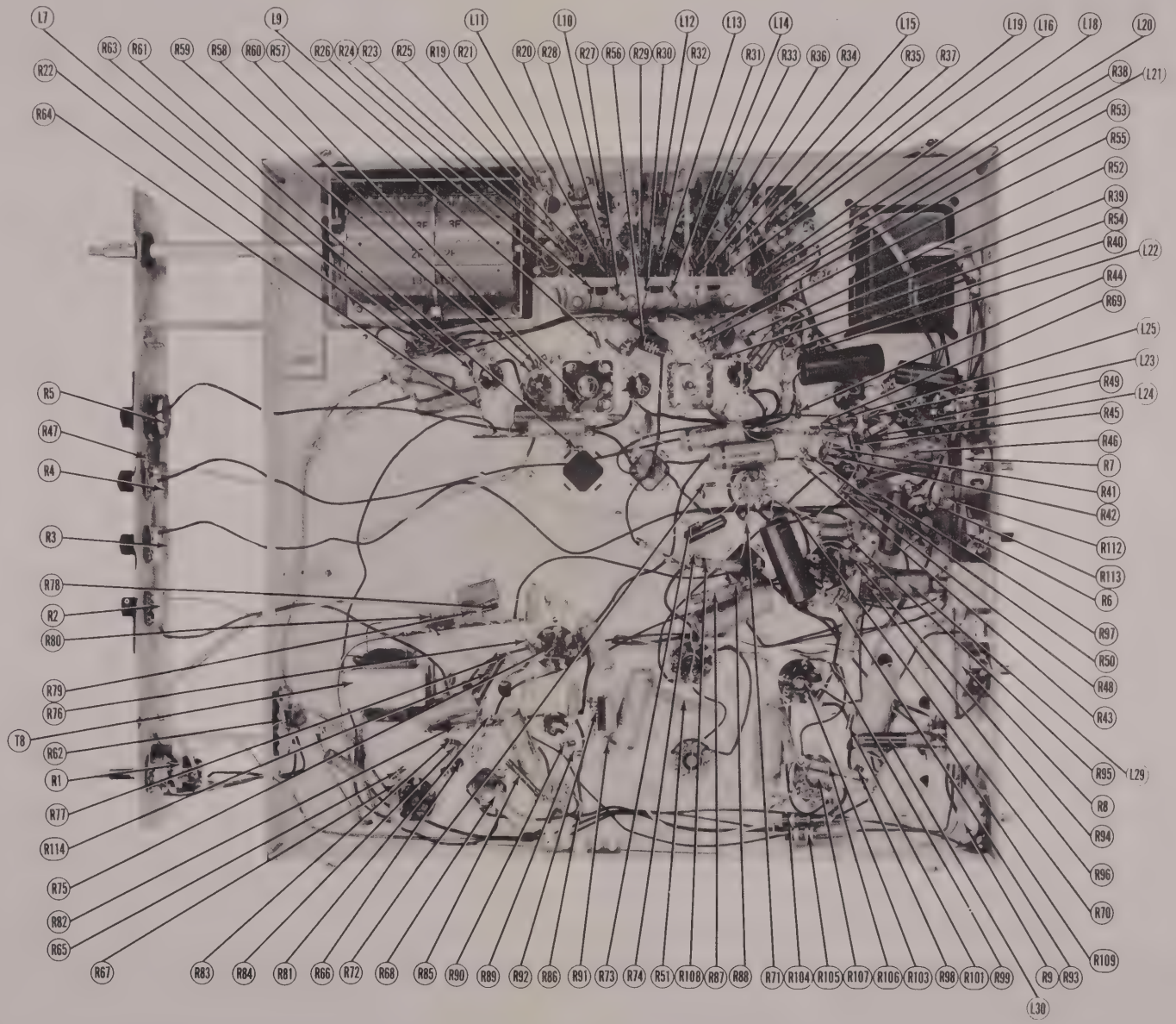
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	SPARTON PART No.	MEISSNER PART No.	
L3	Ant. Coils	0Ω				Part of Tuner Part # PD93156
L4	Fil. Choke	0Ω				Part of Tuner Part # PD93156
L5	RF, Mixer Grid And Osc. Coils	0Ω				Part of Tuner Part # PD93156
L6	Fil. Choke	0Ω				Part of Tuner Part # PD93156
L7	Fil. Choke	.1Ω				
L8	1st Video IF	0Ω				Part of Tuner Part # PD93156
L9	IF Trap Coil	0Ω		AB43523-12		
L10	2nd Video IF	.1Ω		AA6364-1		
L11	Fil. Choke	.1Ω		AA6651-1		
L12	3rd Video IF	.1Ω		AA6408-1		
L13	Fil. Choke	.1Ω		AA6651-1		
L14	4th Video IF	.1Ω		AA6408-1		
L15	Fil. Choke	.1Ω		AA6651-1		
L16	IF Grid Choke	2.8Ω		AA6650-1		
L17	5th Video IF	.5Ω		AA6408-1		
L18	Fil. Choke	.1Ω		AA6651-1		
L19	RF Choke	2.8Ω		AA6650-1		
L20	Fil. Choke	.1Ω		AA6651-1		
L21	Peaking Coil	8Ω		AA6402-6		146 Microhenries (Wound on 4700Ω Resistor)
L22	Peaking Coil	18Ω				600 Microhenries
L23	Peaking Coil	11Ω		AA6402-7		213 Microhenries (Wound on 6800Ω Resistor)
L24	4.5MC Trap	2Ω		AA6407-1		
L25	Peaking Coil	15Ω		AA6613-10		420 Microhenries
L26	1st Sound IF	1.8Ω		AA6364-2		
L27	2nd Sound IF	2.2Ω	2.2Ω	AA6667-5		
L28	Ratio Det.	5Ω	1.2Ω	AA6684-4		
L29	Horiz. Osc.	67Ω		AA6403-2		
L30	Width Coil	.6Ω				

FUSES

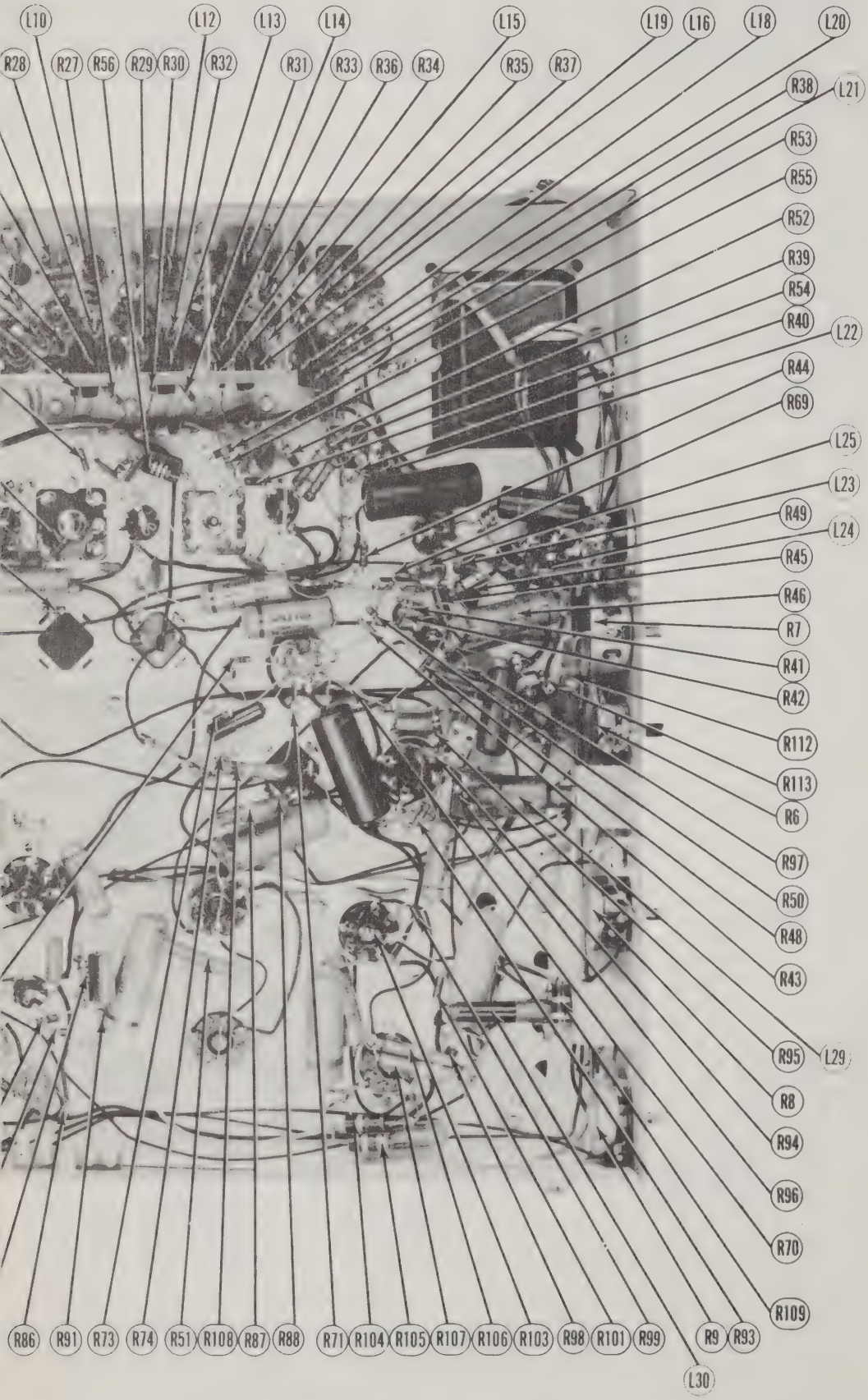
ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			SPARTON PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG PigTail	3/8A	PA4212-3		318.375		
M2	3AG PigTail	1/16A	PA4212-4		318.062		

MISCELLANEOUS

ITEM No.	PART NAME	SPARTON PART No.	NOTES
M3	RF Tuner	PD93156	
M4A	Ion Trap	PA1248-3	Used in Models Using Dumont Picture Tube
B	Ion Trap	PA1248-1	Used in Models Using Sylvania Picture Tube
B2	Trimmer	PA4368	Horizontal Drive (20-270MMF)
	Knob	PB40328	Tone Control
	Knob	PB40333	Fine Tuning
	Knob	PB40332	Channel Selector
	Knob	PB40329	Volume Control
	Knob	PA5651	Vertical Hold, Horizontal Hold, Brightness And Contrast Controls
	Mask	PD93007	
	Safety Glass	PD93008	



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



TOR AND INDUCTOR IDENTIFICATION

V-M
MODEL 150

V-M
MODEL 150

TRADE NAME	V-M Model 150
MANUFACTURER	V-M Corp., Benton Harbor, Michigan
TYPE SET	AC Operated Record Player with 3 Tube Amplifier
TUBES (THREE)	Types 12SQ7GT AF Amp., 50L6GT Power Output, 35ZGT Rectifier
POWER SUPPLY	110-120 Volts AC RATING .22 Amp. @ 117 Volts AC

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		V-M PART No.	STANDARD REPLACEMENT		
V1	AF Amplifier	12SQ7GT	12SQ7GT	8Q	
V2	Power Output	50L6GT	50L6GT	7AC	
V3	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	V-M PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	60	150	VM3832	PRS150/50-30-20		EDL42215 BR202A		TVA-3444 TVA-1306	Filter Filter
B	20	150							Output Cathode
C	20	50							Audio Coupling
C2	.003	600	VM-2850	P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	AF Amp. Plate
C3A	250		VM-3614	SI250	PC-81	5W5T25	GP2K-251	1FM-325	Audio Coupling
B	.01		♦	P688-01	♦	PTE6S1	GP2-333-103	6TM-S1	Output Grid
C	250			SI250		5W5T25	GP2K-251	1FM-325	Tone Comp.
C4	.003	600	VM2850	P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	Isolation
C5	.08	400	VM2894	P488-1	DF-104	PTE4P1		4TM-P1	

♦ Items C3A, C3B, C3C, R6A, R6B are combined in one unit.

CONTROLS

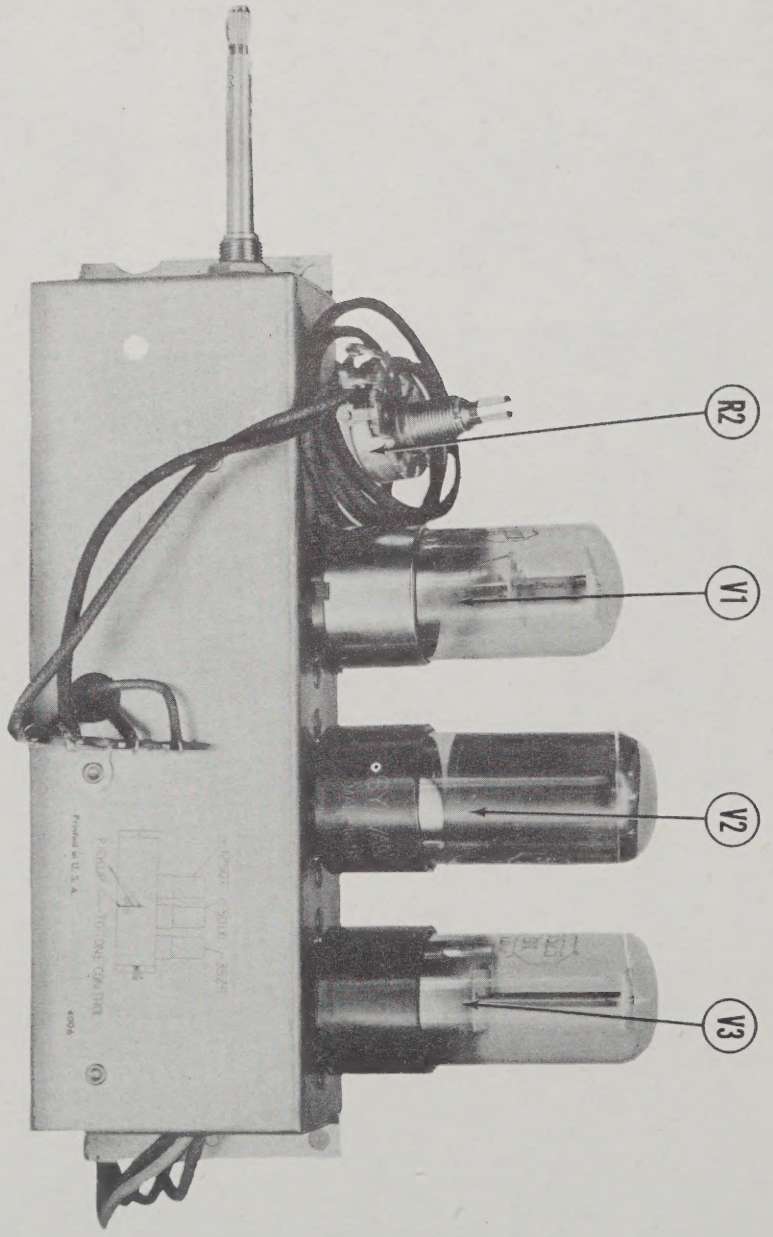
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	V-M PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	2Meg	½	VM3611	Q13-139	AG-66-Z		Volume Control
B	Shaft		Not req.	Not req.	KSS-3		Attach to R1A per instructions
C	Switch		Not Req.	76-1	SWB		Attach to R1A per instructions
R2A	500KΩ	½	VM3648	Q13-133	AG-60-Z		Tone Control
B	Shaft		Not req.	Not req.	KSS-3		Attach to R2A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	V-M PART No.	IRC PART No.	
R3	33KΩ	½	VM3982	BTS-33K	Isolation - See Note
R4	470KΩ	½	VM3032	BTS-470K	Volume Control Shunt
R5	4.7Meg	½	VM2853	BTS-4.7Meg	AF Amp. Grid
R6A	250KΩ	½	VM3614 ♦	BTS-270K	AF Amp. Plate
B	500KΩ	½		BTS-470K	Output Grid
R7	150Ω	½	VM2854	BTS-150	Output Cathode
R8	4700Ω	½	VM2855	BTS-4700	Filter
R9	33Ω	½	VM2893		Surge Limiter
R10	150	5	VM2843	1 3/4A-150	Filament Dropping - Wire Wound

♦ Items R6A, R6B, C4A, C4B, and C3C are combined into one unit.
Note: Some models use 39KΩ resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		V-M	STANCOR	MERIT	CHICAGO	
	PRI.	SEC.	PRI.	SEC.	PART No.	PART No.	PART No.	PART No.	
T1	1.5KΩ	3Ω	130Ω	.3Ω		A-3865	A-2928 ①	R0-2 ①	① Drill one new mounting hole.

SPEAKER

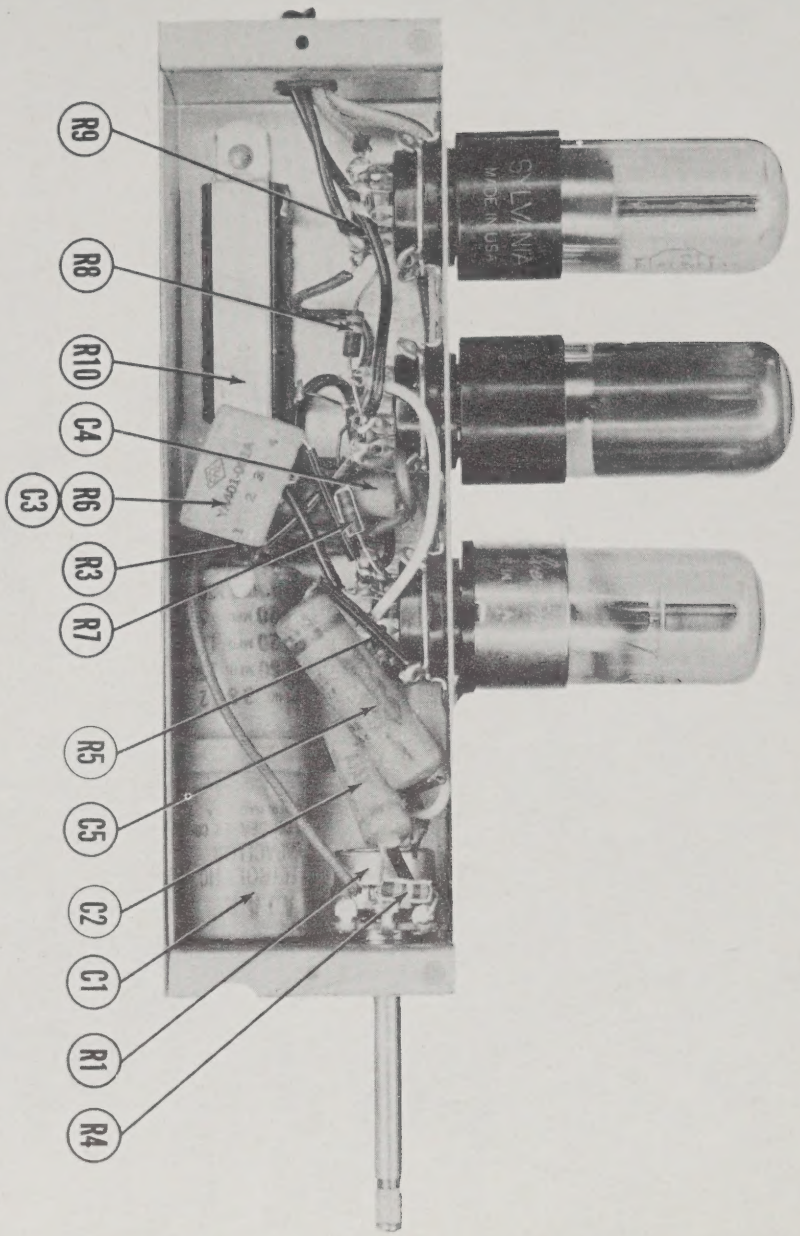
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			V-M PART No.	VIKING PART No.	QUAM PART No.	
	FIELD	V. C. IMP.				
SP1	PM	3Ω		46J6	46A1	
	CONE DIA.	V. C. DIA.				
SP2	4"X6"	9/16"				

PHONO CARTRIDGE and NEEDLE

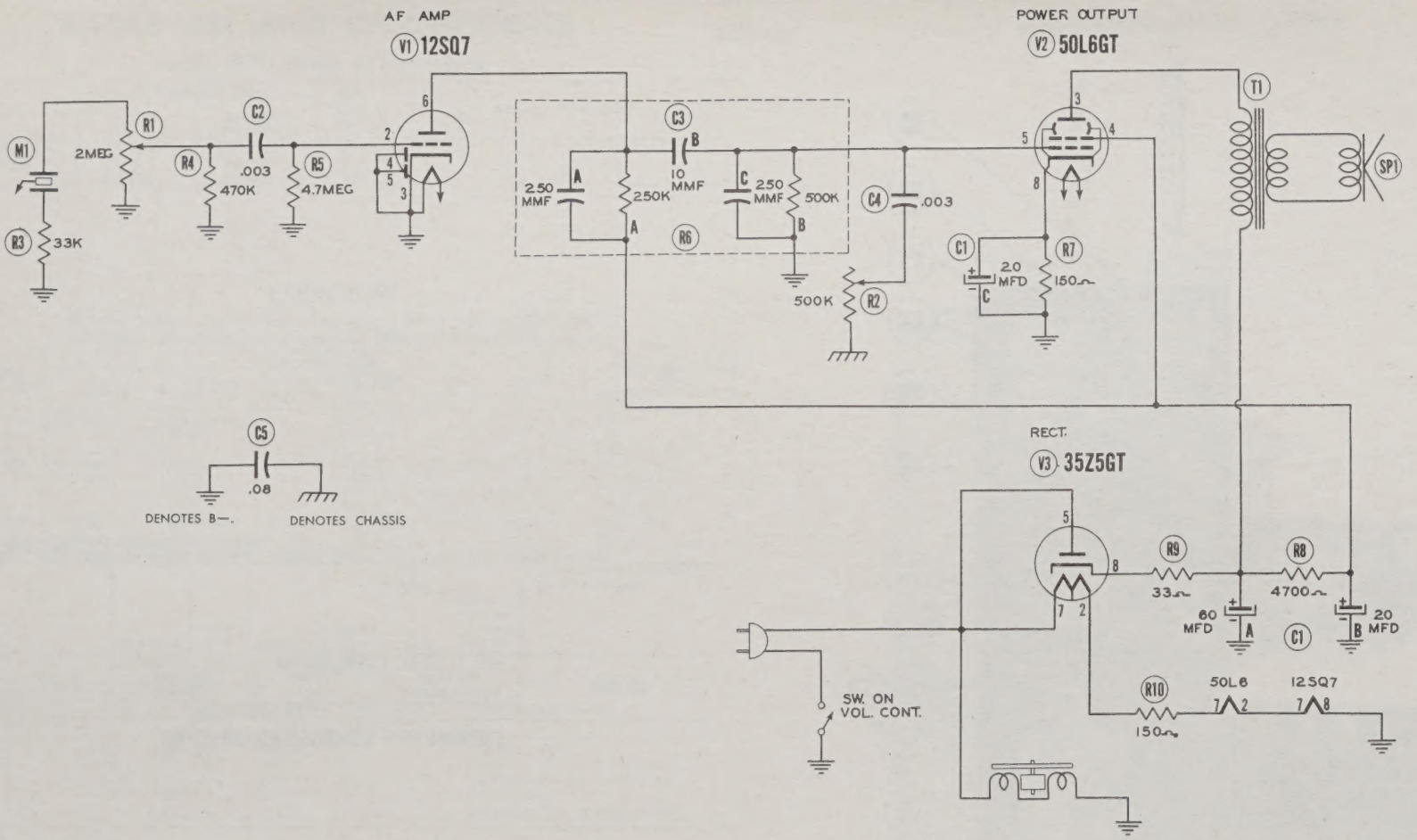
ITEM No.	REPLACEMENT DATA								REMARKS
	V-M PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		ACD-C-J	A-1 A-3	WC22AB	A62A A65MG	96-0 *2600 †2696	0-1 or S-3 and 0-3 or S-3	*Tone Arms shell † Complete Arm Assembly

ASTATIC, SHURE, AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

CHASSIS—BOTTOM VIEW



V-M MODEL 150



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SQ7GT	0V	-.6VDC	0V	0V	0V	70VDC	12VAC	0V
V 2	50L6GT	0V	12VAC	115VDC	105VDC	0V	0V	55VAC	6.9VDC
V 3	35Z5GT	120VDC	80VAC	90VAC	120VDC	117VAC	117VAC	117VAC	125VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SQ7GT	Inf.	4.7Meg	0Ω	0Ω	0Ω	†255KΩ	14Ω	0Ω
V 2	50L6GT	Inf.	14Ω	†163Ω	†4.7KΩ	500KΩ	Inf.	65Ω	150Ω
V 3	35Z5GT	40KΩ	215Ω	228Ω	40KΩ	240Ω	240Ω	240Ω	40KΩ

† MEASURED FROM PIN 8 OF V3

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.